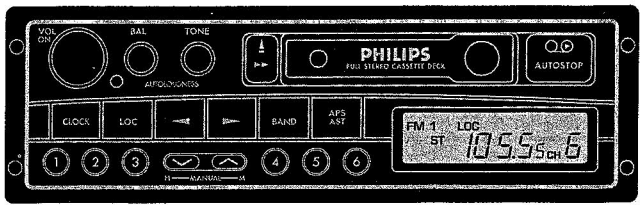
Cassette car radio 79DC206/02/82

79DC203/00/80

Service
Service
Service



For repair information of the cassette deck see Service Manual of Car cassette deck TN-301NX

Service Manual

12 V

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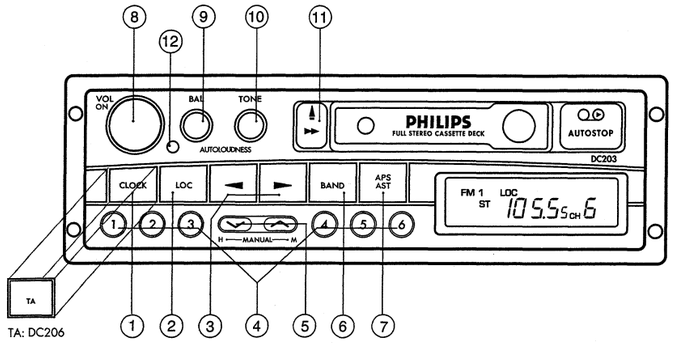
3. SERVICE HINTS



OPERATION

1. Frequency/Clock display control (DC203 only)
   Traffic information (DC206 only)
2. Local/Distant control
3. Search tuning controls
4. Memory presets (1-6)
5. Manual tuning controls
6. Waveband selector
7. Auto Preset Scan/Auto-memory Store
8. On/off-volume
9. Balance control
10. Tone control
11. Cassette eject and Fast-forward
12. Anti-theft Warning LED

Setting the Clock (DC203 only)
- Keep the CLOCK button pressed while you set:
– the **minutes** with manual tune up (5)
– the **hours** with manual tune down (5).

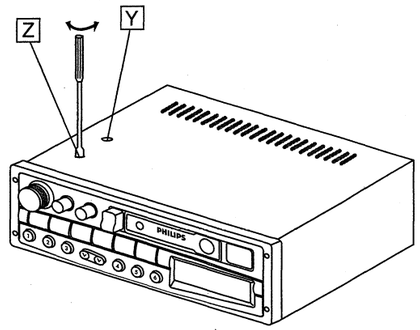
Storing a Station
- Press the desired memory preset key for 2 seconds to store the current frequency.
– The radio will mute for a short time to confirm the station has been stored.

Auto Memory Store
- Press the AMS button (7) for 2 seconds.
– The radio will search and store the next 6 stations on the current waveband's presets.

Auto Preset Scan
- **Breifly** press the APS button.
– The radio will tune to each available preset station for 5 seconds and skip stations with bad reception quality. At the end of the band (e.g. FM2) the scanning continues on the next band (e.g. FM3).

Switching on TA Mode (DC206 only)
- Briefly press the TA key. *The display shows 'TA'.*
If the current station does not have traffic announcements, or you move out of the coverage area of the current station, the radio will search for another traffic information station.

Traffic Announcement pre-set volume level
The factory pre-set volume level can be readjusted if necessary.
- Switch on the radio, tune to and FM station and turn the volume control to minimum.
- Use a small scresdiver through opening 'Y' to make contact between the chassis and the solder pad visible through the opening. you now hear the sound at the level used for traffic messages.
- Adjust potentiometer through opening 'Z' using a small screwdriver, until the desired volume is obtained.



SERVICING

- Access to the front panel connector is easier if the deck is first removed.

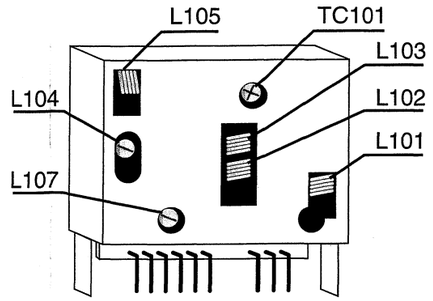
- The FM tuner module is aligned and fixed at the factory. Further re-alignment should only be performed if really necessary.

ESD

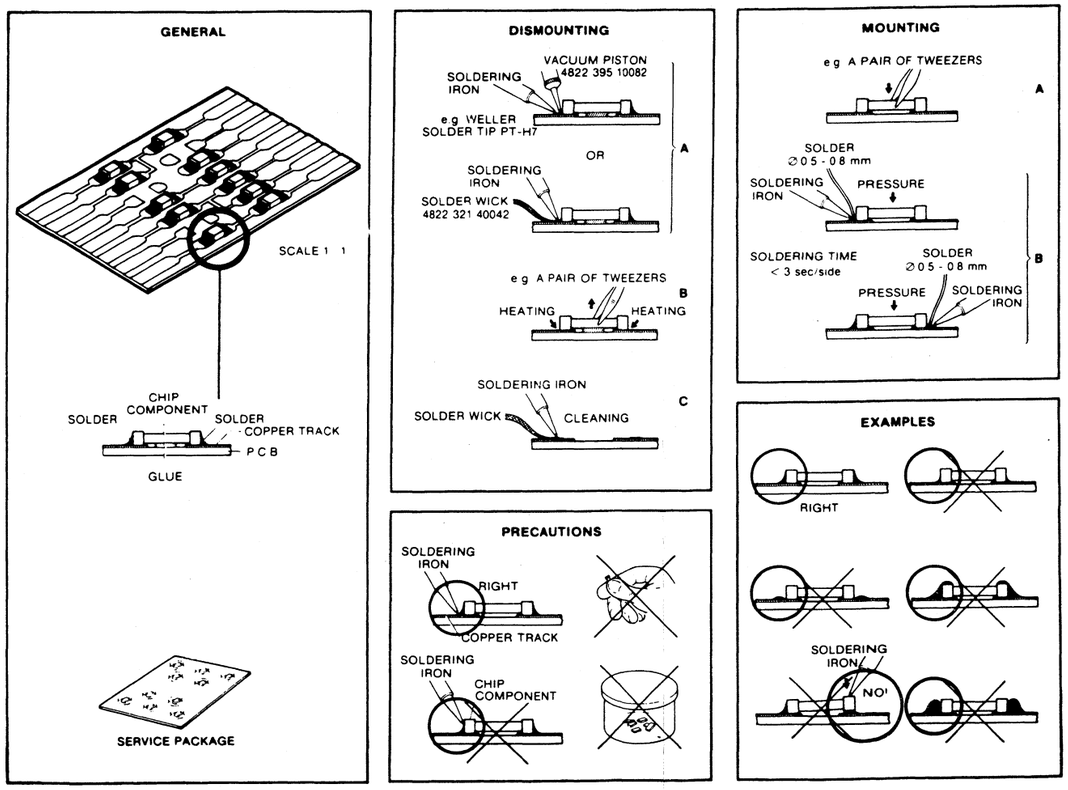
All IC's and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected to the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

FM TUNER ALIGMENT LOCATIONS



HANDLING CHIP COMPONENTS



4. ALIGNMENTS AND CHECKS

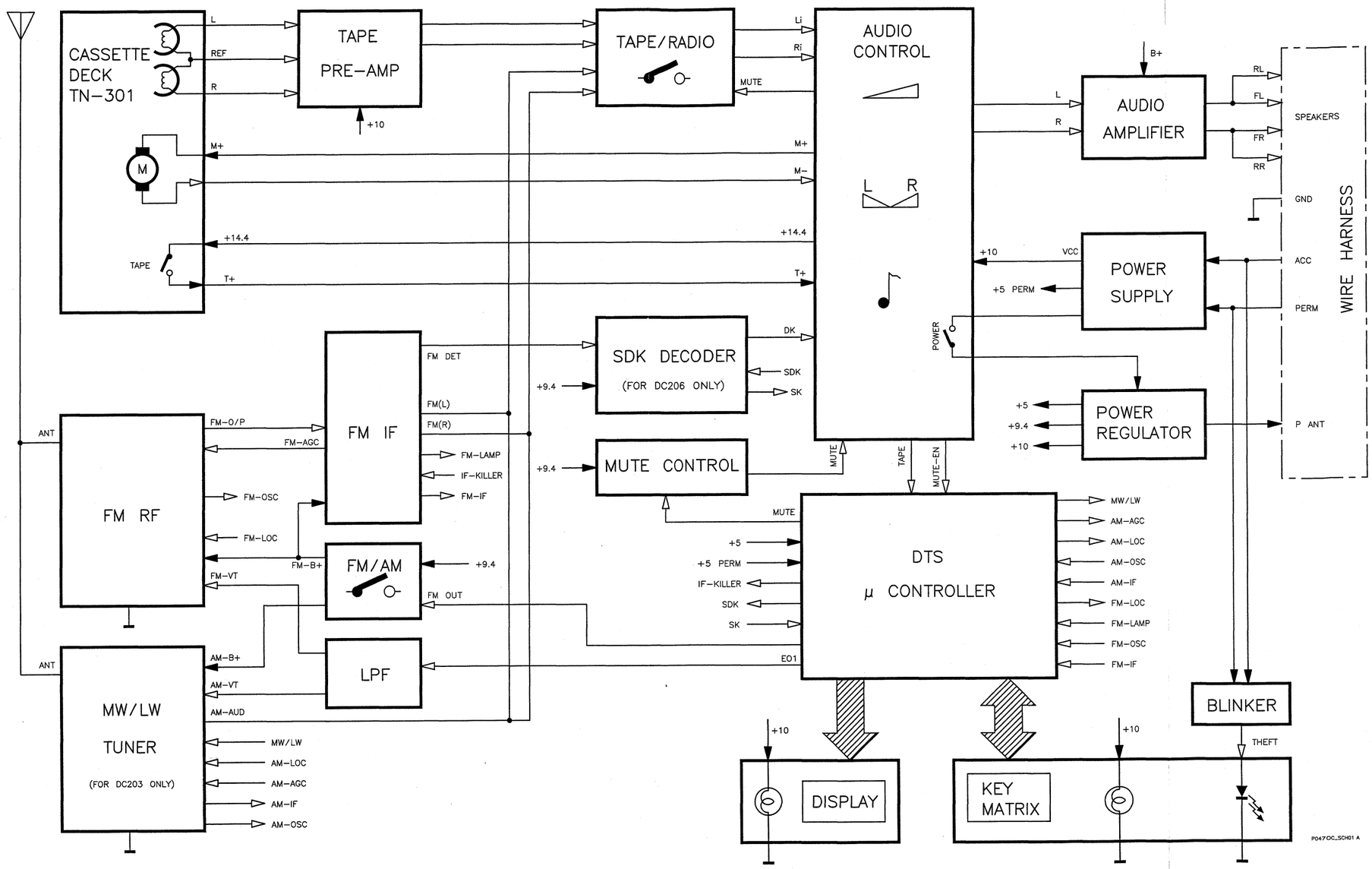
For more information see general information "General alignment procedures for car radio."

Alignment	SK	⇝	◇	▭	∅	📻
FM-VT	FM			87.5 MHz	L104	◇3 1.2 ± 0.1 V
				108 MHz		◇3 7.8 ± 0.1 V
FM Sensitivity	FM	90.1 MHz, 1 mV Δf = 22.5 kHz f mod. = 1 kHz	◇A		L103	◇1 Maximum output
		106.1 MHz, 1 mV Δf = 22.5 kHz f mod. = 1 kHz			TC101	◇1 Maximum output
		98 MHz, 1 mV Δf = 22.5 kHz f mod. = 1 kHz			L101	◇1 Maximum output
FM-IF	FM	98 MHz, 1 mV Δf = 22.5 kHz f mod. = 1 kHz 3% THD	◇A		L107	◇1 Minimum distortion
MW-VT	MW			522 kHz	L207	◇3 1.2 ± 0.1 V
				1620 kHz	TC203	◇3 7.8 ± 0.1 V
MW Sensitivity	MW	603 kHz 1 kHz, 30% AM	◇B		L202 L204	◇1 Maximum output
		1395 kHz 1 kHz, 30% AM			TC202	
MW-IF	MW	603 kHz 1 kHz, 30% AM	◇B		L210 L211	◇1 Maximum output
MW local search level	MW	1053 kHz, 16 µV 1 kHz, 30% AM	◇B		VR201	◇4 0.7 ± 0.02 V
LW-VT	LW			153 kHz	L208	◇3 0.94 ± 0.05 V
LW Sensitivity	LW	207 kHz 1 kHz, 30% AM	◇B		L203 L205	◇1 Maximum output
		252 kHz 1 kHz, 30% AM			TC204 TC205	
FM-IF	FM	98 MHz, 1 mV Δf = 22.5 kHz f mod. = 1 kHz	◇A		L300	◇5 0 ± 0.05 V
Stereo separation	FM	98 MHz, 2 mV Δf = 22.5 kHz f mod. = 1 kHz L only	◇A		VR300 full CW; VR302	◇1 Maximum output
Pilot signal	FM	98 MHz, 2 mV Δf = 22.5 kHz Pilot signal only	◇A		VR301	L ◇1 – R ◇2 Minimum and Symmetric
SDS	FM	98 MHz, 141 µV Δf = 22.5 kHz f mod. = 6.75 kHz Pilot signal on	◇A		VR300	L ◇1 – R ◇2 = 10 dB separation
FM local search level	FM	98 MHz, 10 µV Δf = 22.5 kHz f mod. = 1 kHz	◇A		VR303 A○	◇6 IF signal output
		98 MHz, 8 µV Δf = 22.5 kHz f mod. = 1 kHz			VR303 A●	◇6 No IF signal

Alignment	SK	⇝	◇	▭	∅	📻
SK	FM + TA	98 MHz, 0.5 mV Δf = 22.5 kHz f mod. = 6.75 kHz +SK+BK Pilot only	◇A		L701	◇7 Maximum
DK	FM + TA	98 MHz, 0.5 mV Δf = 22.5 kHz f mod. = 6.75 kHz +SK+BK+DK Pilot only	◇A		VR704	◇8 Maximum

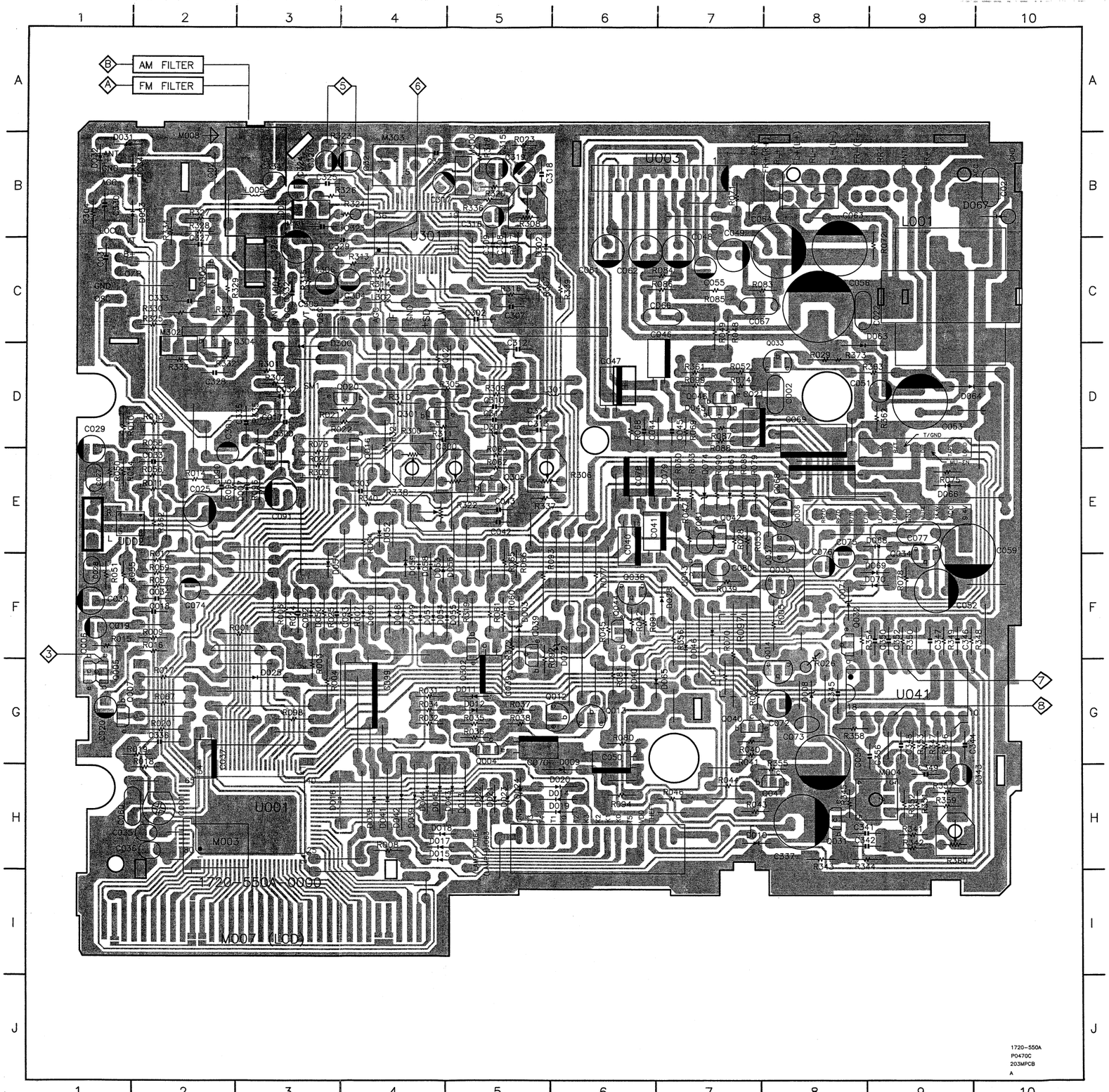
Check	SK	⇝	◇	▭	Setting of Controls	📻
α – 3 dB	FM	98 MHz, 1 mV Δf = 22.5 kHz f mod. = 1 kHz	◇A		◢	◇1 0 dB (775 mV)
		98 MHz, 10 µV Δf = 22.5 kHz f mod. = 1 kHz				◇1 – 3 dB
SDS	FM stereo	98 MHz, 1 mV Δf = 22.5 kHz f mod. = 1 kHz	◇A		◢ + ◣	L ◇1 = R ◇2 = 0 dB
		98 MHz, 141 µV stereo – R				L ◇1 – R ◇2 = 10 dB
SDR	FM	98 MHz, 1 mV Δf = 22.5 kHz f mod. = 10 kHz	◇A		◢	◇1 0 dB
		98 MHz, 20 µV Δf = 22.5 kHz f mod. = 10 kHz				◇1 – 10 dB
26 dB S/N	FM	98 MHz, 8 µV Δf = 22.5 kHz f mod. = 1 kHz	◇A		◢	◇1 2 V~ (0 dB)
		98 MHz, 8 µV without mod.				◇1 – 26 dB
	MW	1053 kHz, 30 µV 1 kHz, 30% AM	◇B		◢	◇1 2 V~ (0 dB)
		1053 kHz, 30 µV without mod.				◇1 – 26 dB
	LW	207 kHz, 50 µV 1 kHz, 30% AM	◇B		◢	◇1 2 V~ (0 dB)
		207 kHz, 50 µV without mod.				◇1 – 26 dB
Crosstalk	FM	98 MHz, 1 mV Δf = 22.5 kHz f mod. = 1 kHz	◇A		◢ + ◣	L ◇1 = R ◇2 = 0 dB
		98 MHz, 1 mV stereo – R				L ◇1 – R ◇2 = 18 dB
Aerial sensitivity	MW	1053 kHz, 3.5 µV 1 kHz, 30% AM	◇B		◢ max.	◇1 2 V~ (≡ 1 W)
	LW	207 kHz, 8 µV 1 kHz, 30% AM				
SDK sensitivity	FM + TA	98 MHz, 5.6 µV Δf = 22.5 kHz f mod. = 1 kHz +SK+BK+DK	◇A		◢ min.	'TP' lights and DK signal ◇1

5. BLOCK DIAGRAM



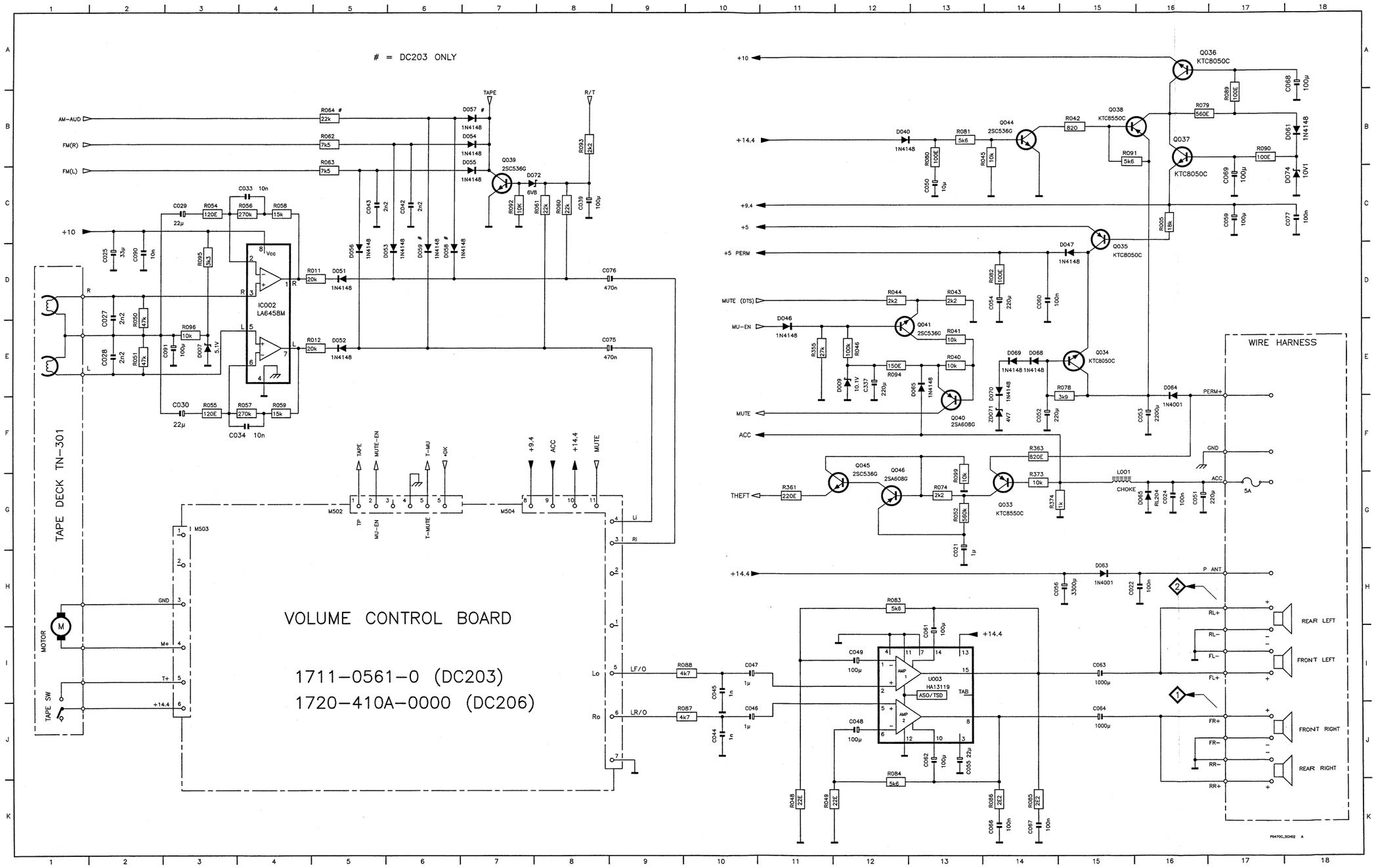
3. MAIN PCB

C001	H2	C348	G9	R003	G3	R322	E5
C002	D8	C349	H9	R004	G3	R323	B3
C017	D3	C350	F9	R005	F8	R324	B4
C018	F2	C352	F9	R006	F3	R325	C2
C019	F1	C356	H9	R007	F4	R326	B3
C020	G1	D003	F5	R008	H4	R327	B2
C021	D7	D007	E3	R009	F2	R328	B2
C022	C9	D008	G8	R010	D2	R329	C3
C024	B9	D009	G6	R011	E2	R330	C2
C025	E2	D010	H7	R012	F2	R331	C2
C027	E1	D011	G5	R013	D2	R332	D2
C028	F1	D012	G5	R014	E2	R333	D2
C029	D1	D014	H5	R015	F1	R334	C2
C030	F1	D015	H4	R016	F2	R335	D3
C031	C1	D017	H4	R017	G2	R339	C6
C032	D3	D018	H4	R018	G2	R340	E4
C033	E2	D019	H5	R019	G1	R341	H9
C034	F2	D020	H5	R020	G2	R342	H9
C035	H1	D021	H5	R021	D3	R343	H8
C036	H1	D022	H5	R022	D3	R344	H8
C037	H2	D023	H5	R023	B5	R345	H8
C039	G5	D024	H5	R027	E3	R346	G9
C040	F6	D025	G3	R029	D8	R347	G9
C041	E7	D028	F7	R031	G4	R348	F9
C042	E5	D031	B1	R032	G4	R349	F9
C043	E5	D032	B1	R034	G4	R350	F9
C044	D6	D033	B2	R035	G5	R351	H9
C045	D7	D034	B2	R036	G5	R352	H9
C046	C6	D039	H4	R037	G5	R353	G9
C047	D6	D040	G6	R038	G5	R354	F9
C048	C7	D041	H4	R040	G7	R355	H8
C049	B7	D043	H5	R041	G7	R356	F7
C050	G6	D046	F7	R042	F6	R357	H9
C051	D8	D047	G7	R043	H7	R358	G8
C052	F9	D051	F3	R044	H7	R360	H9
C053	D9	D052	E4	R045	F6	R361	D7
C054	H8	D053	F4	R046	H7	R362	D9
C055	C7	D054	F4	R048	C7	R362	E2
C056	C8	D055	F5	R049	C7	R363	D8
C059	E9	D056	F5	R050	E1	U001	H3
C060	H1	D057	F4	R051	F1	U002	E2
C061	C6	D058	F4	R052	D7	U003	B6
C062	C6	D059	F4	R054	E2	U041	G9
C063	B8	D061	E7	R055	F2	U301	B4
C064	B7	D063	C8	R056	E2		
C066	C6	D064	D9	R057	F2		
C067	C7	D065	G7	R058	D2		
C068	E8	D066	E9	R059	F2		
C069	D8	D068	E8	R060	F5		
C070	H5	D069	F8	R061	F5		
C072	G8	D070	F8	R062	E5		
C073	G8	D071	F8	R063	E5		
C074	F2	D072	G6	R064	E4		
C075	E8	D074	E7	R067	G2		
C076	F8	D300	D3	R070	F7		
C077	E9	D301	D5	R071	B7		
C090	E2	D302	C5	R072	C9		
C091	E3	L001	C9	R073	D3		
C300	E4	L002	B2	R074	D7		
C301	D2	L003	B3	R075	E9		
C302	C5	L004	C3	R077	F6		
C303	E4	L301	D5	R078	F9		
C304	C4	L302	C4	R079	E7		
C305	C3	M003	H2	R080	G6		
C306	C3	M004	H9	R081	G6		
C307	C5	M007	I3	R082	G7		
C308	C5	M300	B5	R083	C7		
C309	C5	M301	B3	R084	C6		
C310	D5	M302	C2	R085	C7		
C311	D5	M303	B4	R086	C6		
C312	D5	Q004	G5	R087	D7		
C313	D5	Q005	G1	R088	E7		
C314	D5	Q006	F1	R089	E7		
C315	B5	Q007	G2	R090	E7		
C316	B5	Q012	G5	R091	F7		
C317	B4	Q013	G6	R092	G6		
C318	B6	Q014	F8	R093	F6		
C319	B5	Q016	E4	R094	H6		
C320	B3	Q020	D3	R095	E2		
C321	B4	Q031	H8	R096	E3		
C322	B4	Q032	F8	R097	F7		
C323	B4	Q033	D8	R099	D7		
C324	B3	Q034	F9	R300	D4		
C325	B3	Q035	F8	R301	D3		
C326	C3	Q036	E8	R302	D3		
C327	C2	Q037	F8	R303	E3		
C328	D2	Q038	F6	R304	B1		
C329	C3	Q039	F5	R305	D4		
C330	B1	Q040	G7	R306	E6		
C332	C3	Q041	H8	R307	C5		
C333	C2	Q042	E7	R308	B5		
C335	D3	Q043	F7	R309	D5		
C336	G2	Q044	F6	R310	D4		
C337	H8	Q045	D7	R311	D4		
C341	H8	Q046	D7	R312	C4		
C342	H8	Q300	D3	R313	C4		
C343	H9	Q301	D4	R314	C4		
C344	G9	Q303	C2	R315	C3		
C345	G8	Q304	D2	R316	C5		
C346	F9	R001	F2	R317	C5		
C347	F9	R002	D5	R320	B5		



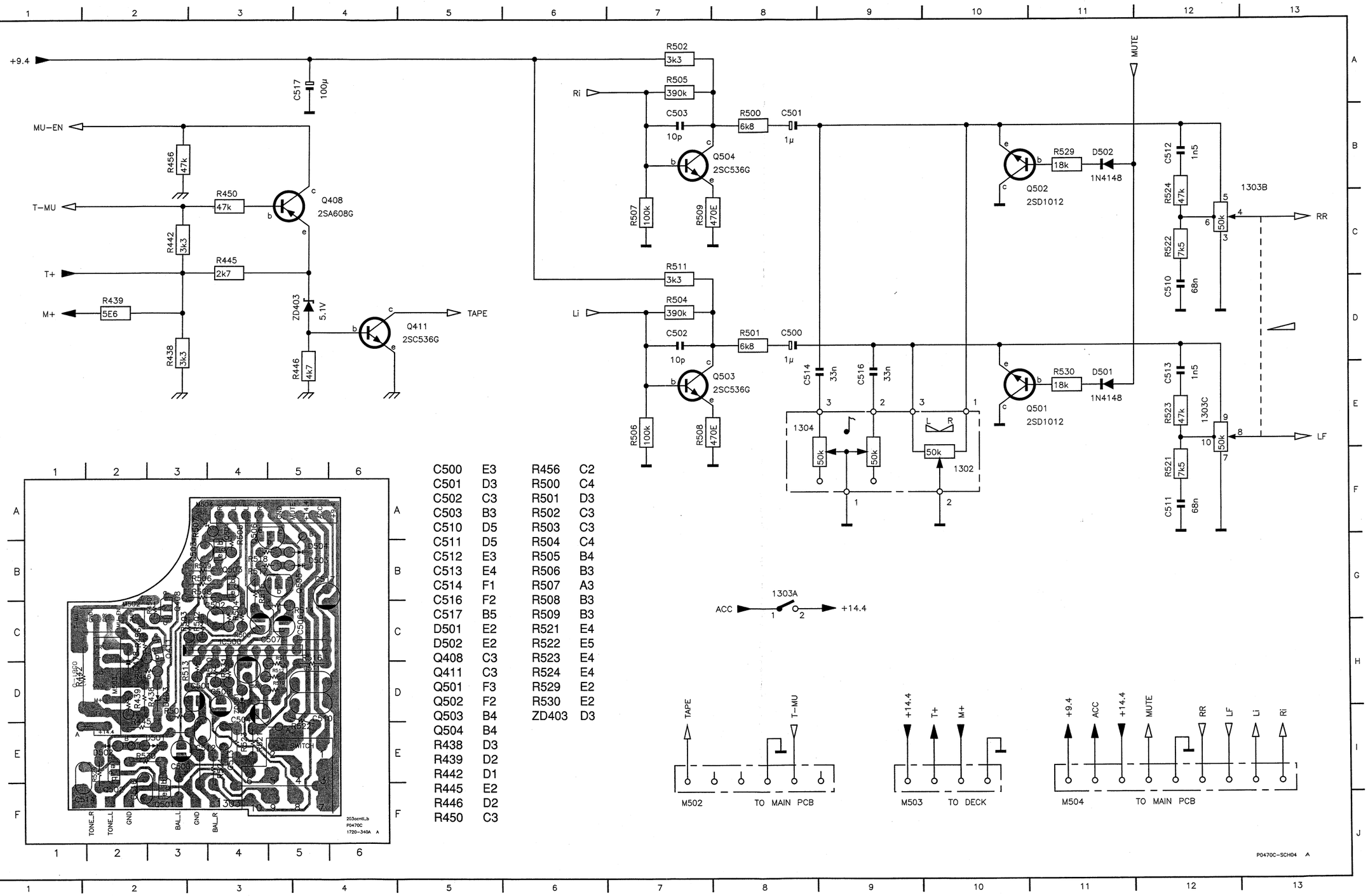
11. MAIN PCB AUDIO PATH + POWER REGULATOR

C021	H13	C030	F3	C045	I10	C052	F14	C061	I13	C069	C17	D007	E3	D053	D6	D061	B17	D070	F14	M504	G7	Q039	B7	R011	D4	R045	B14	R054	C3	R061	C8	R080	B13	R087	J9	R094	E12	R373	G14
C022	H15	C033	C4	C046	J10	C053	F16	C062	J13	C075	E8	D008	E12	D054	B7	D063	H15	D072	C7	Q033	G14	Q040	F13	R012	E4	R046	E12	R055	F3	R062	B5	R081	B13	R088	I9	R095	D3	R374	G14
C024	G16	C034	F3	C047	I10	C054	D14	C063	I15	C076	D8	D040	B12	D055	B7	D064	E16	D074	C17	Q034	E15	Q041	E13	R040	E13	R048	K11	R056	C4	R063	B5	R082	D14	R089	B17	R096	E3	U003	I13
C025	D2	C039	C8	C048	J12	C055	J13	C064	J15	C077	C17	D046	E11	D056	D5	D065	F13	IC002	D4	Q035	D15	Q044	B14	R041	E13	R049	K11	R057	F4	R064	B5	R083	H12	R090	B17	R099	G13	ZD071	F14
C027	E2	C042	C6	C049	I12	C056	H15	C065	G16	C090	D2	D047	D15	D057	B7	D065	G16	L001	G15	Q036	A16	Q045	F12	R042	B15	R050	E2	R058	C4	R074	G13	R084	J12	R091	B15	R355	E11		
C028	E2	C043	C5	C050	C13	C059	C17	C066	K14	C091	E3	D051	D5	D058	D6	D068	E14	M502	G5	Q037	A16	Q046	F12	R043	D13	R051	E2	R059	F4	R078	E14	R085	K14	R092	C7	R361	G11		
C029	C3	C044	J10	C051	G16	C060	D14	C068	B17	C337	E12	D052	E5	D059	D6	D069	E14	M503	G3	Q038	B15	R005	C16	R044	D12	R052	G13	R060	C8	R079	B16	R086	K14	R093	B8	R363	F14		



12. AUDIO CONTROL (DC 203 ONLY)

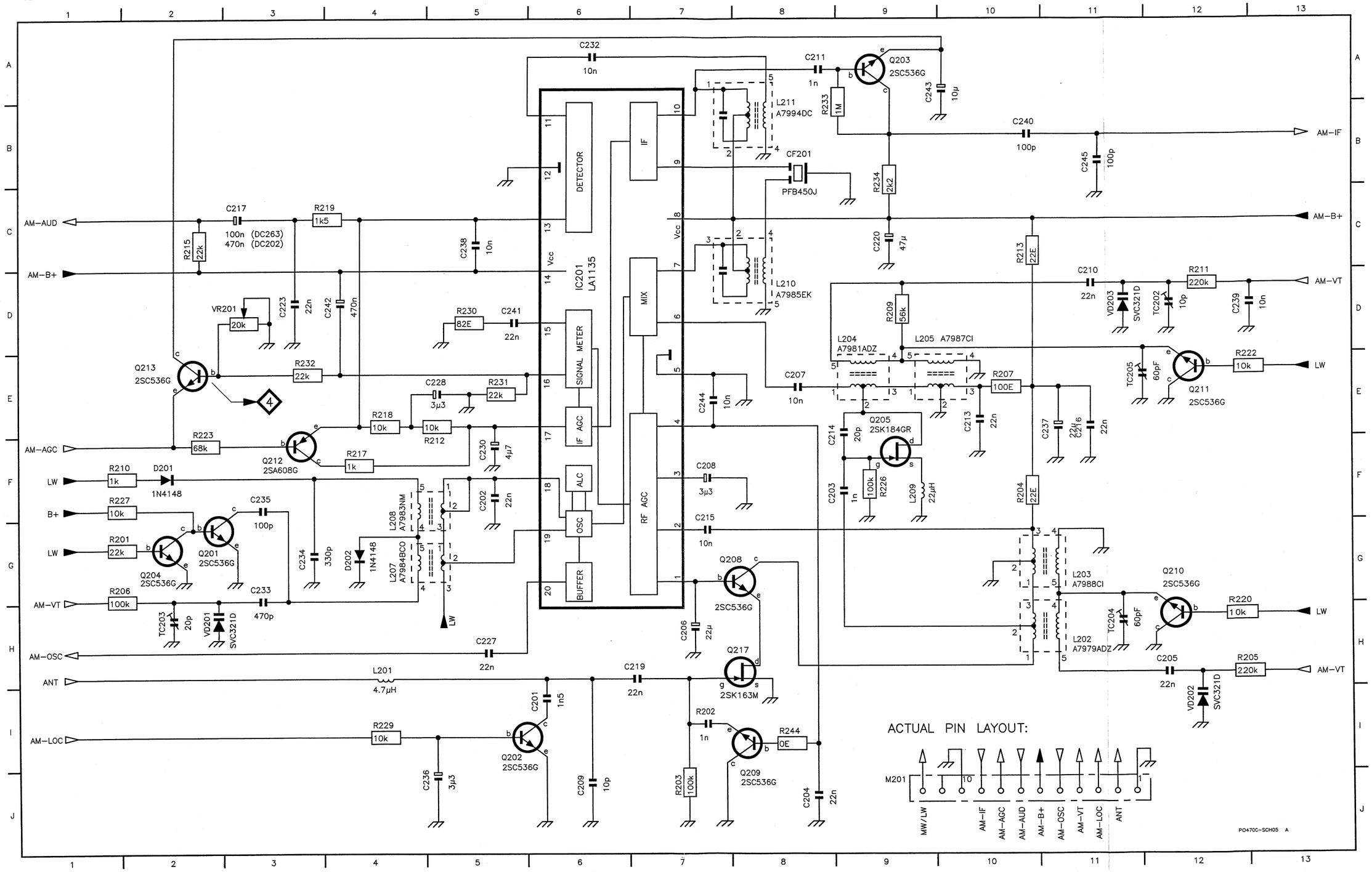
1302	G10	C501	C8	C513	F12	M502	K7	Q502	D10	R445	D3	R502	B7	R509	D7	R529	C11
1303A	H8	C502	E7	C514	F8	M503	K9	Q503	F8	R446	F4	R504	E7	R511	D7	R530	F11
1303B	D13	C503	C7	C516	F9	M504	K11	Q504	C8	R450	D3	R505	B7	R521	G12	ZD403	E4
1303C	F12	C510	E12	C517	B4	Q408	D4	R438	F2	R456	C2	R506	F7	R522	D12		
1304	F8	C511	G12	D501	F11	Q411	E5	R439	E2	R500	C8	R507	D7	R523	F12		
C500	E8	C512	C12	D502	C11	Q501	F10	R442	D2	R501	E8	R508	F7	R524	D12		



C500	E3	R456	C2
C501	D3	R500	C4
C502	C3	R501	D3
C503	B3	R502	C3
C510	D5	R503	C3
C511	D5	R504	C4
C512	E3	R505	B4
C513	E4	R506	B3
C514	F1	R507	A3
C516	F2	R508	B3
C517	B5	R509	B3
D501	E2	R521	E4
D502	E2	R522	E5
Q408	C3	R523	E4
Q411	C3	R524	E4
Q501	F3	R529	E2
Q502	F2	R530	E2
Q503	B4	ZD403	D3
Q504	B4		
R438	D3		
R439	D2		
R442	D1		
R445	E2		
R446	D2		
R450	C3		

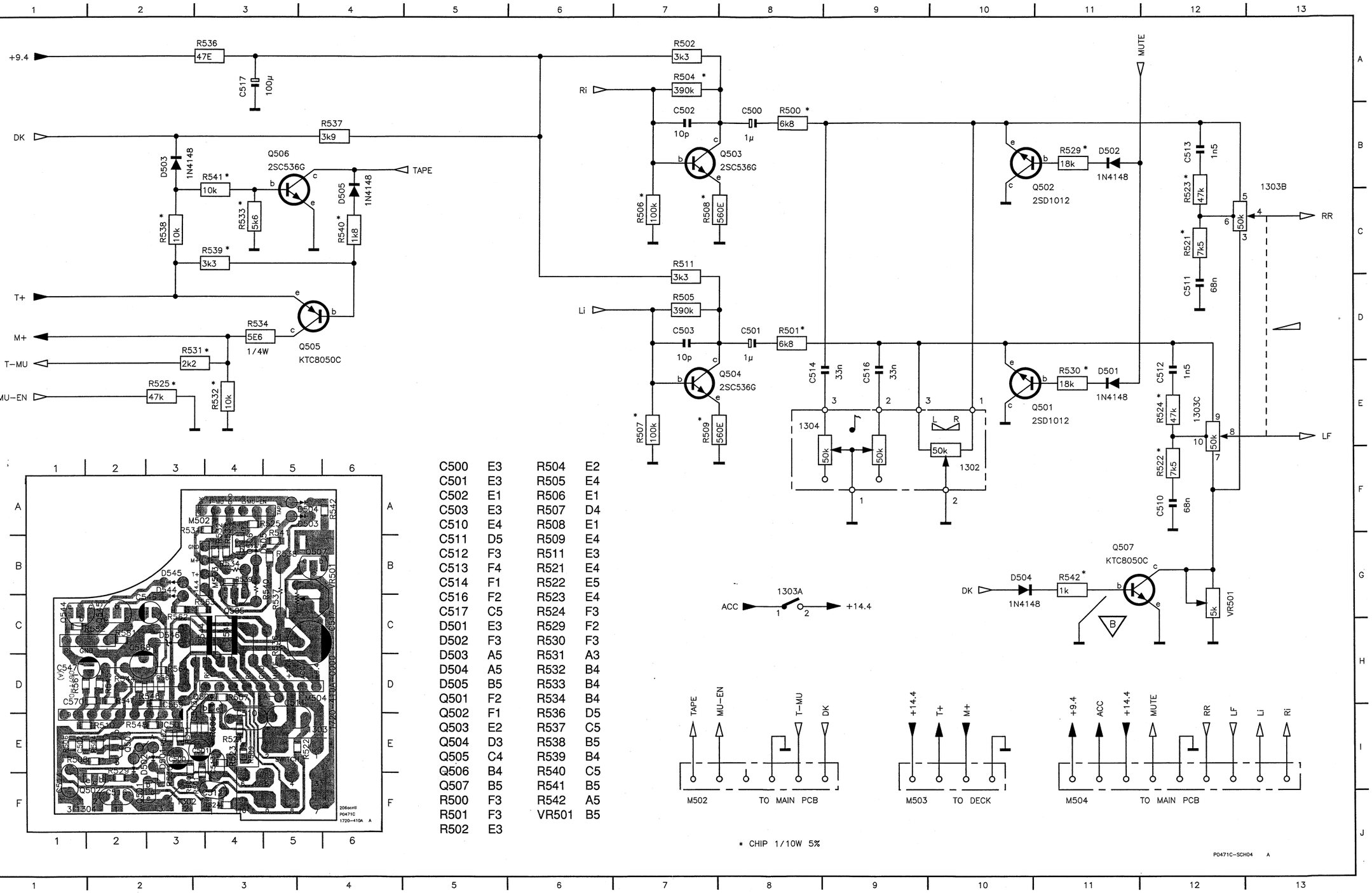
13. AM TUNER (DC 203 ONLY)

C201	I6	C207	E8	C214	F8	C223	D3	C234	G3	C240	B10	CF201	B8	L203	G11	L210	D8	Q204	G2	Q212	F3	R204	F10	R211	D12	R219	C3	R229	I4	R244	I8	VD202	I12
C202	F5	C208	F7	C215	G7	C227	H5	C235	F3	C241	D5	D201	F2	L204	D9	L211	B8	Q205	E9	Q213	E2	R205	H12	R212	F4	R220	H12	R230	D5	TC202	D12	VD203	D11
C203	F8	C209	J6	C216	F11	C228	E4	C236	J5	C242	D4	D202	G4	L205	D9	M201	J9	Q208	G7	Q217	H7	R206	G1	R213	C10	R222	E12	R231	E5	TC203	H2	VR201	D2
C204	J8	C210	D11	C217	C3	C230	F5	C237	F11	C243	B9	IC201	D6	L207	G4	Q201	G2	Q209	J8	R201	G1	R207	E10	R215	C2	R223	E2	R232	E3	TC204	H11		
C205	H12	C211	A8	C219	H6	C232	A6	C238	C5	C244	E7	L201	H4	L208	G4	Q202	I5	Q210	G12	R202	I7	R209	D9	R217	F4	R226	F9	R233	B8	TC205	E11		
C206	H7	C213	E10	C220	C9	C233	G3	C239	D12	C245	B11	L202	H11	L209	F9	Q203	A9	Q211	E12	R203	J7	R210	F1	R218	E4	R227	F1	R234	C9	VD201	H2		



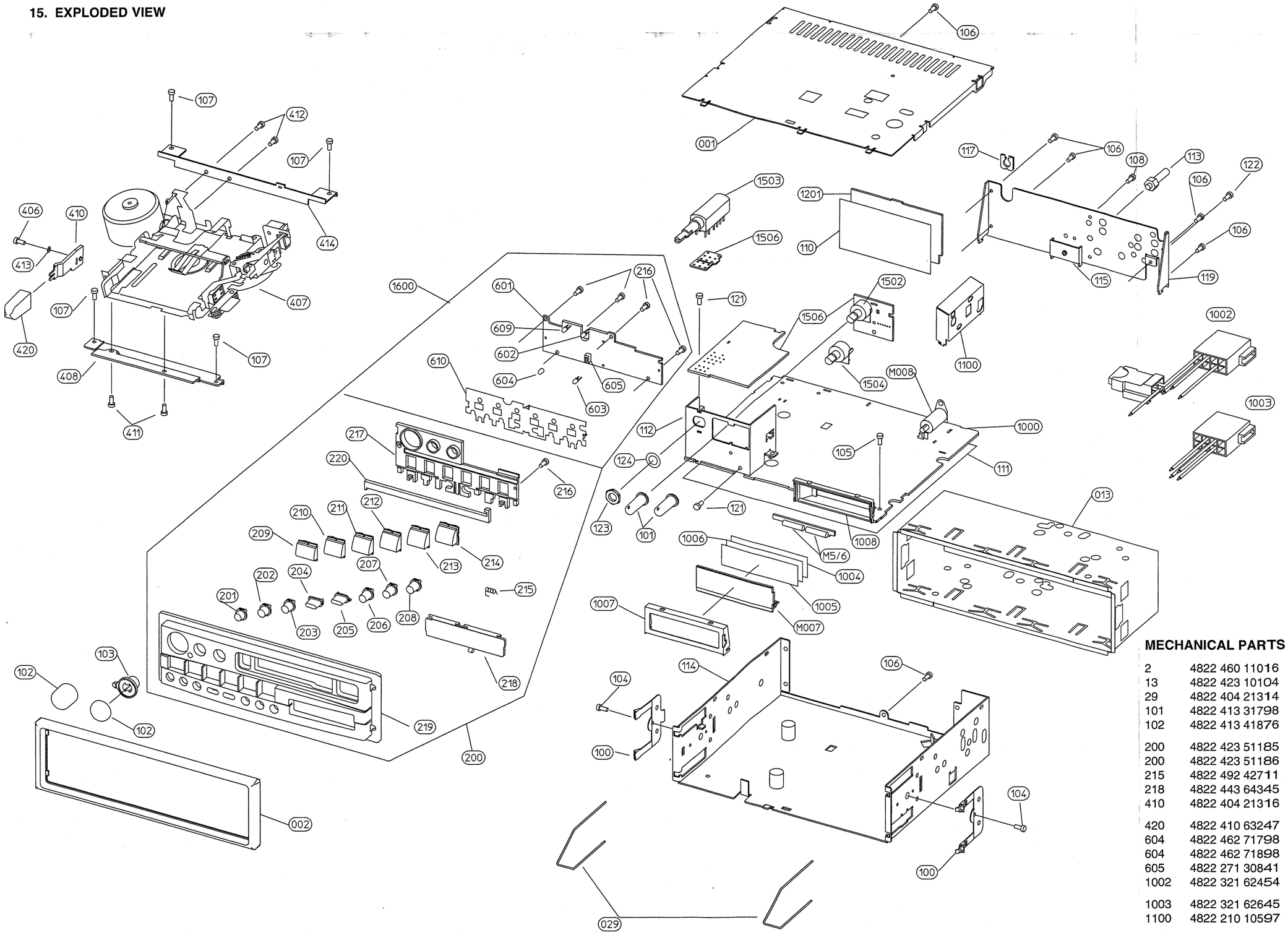
14. AUDIO CONTROL (DC 206 ONLY)

1302	G10	C501	E8	C513	C12	D503	C2	Q501	F10	Q507	H11	R506	D7	R522	G12	R531	E2	R538	D2
1303A	H8	C502	C7	C514	F8	D504	H10	Q502	D10	R500	C8	R507	F7	R523	D12	R532	F3	R539	D3
1303B	D13	C503	E7	C516	F9	D505	D4	Q503	C8	R501	E8	R508	D7	R524	F12	R533	D3	R540	D4
1303C	F12	C510	G12	C517	B3	M502	K7	Q504	F8	R502	B7	R509	F7	R525	F2	R534	E3	R541	C3
1304	F8	C511	E12	D501	F11	M503	K9	Q505	E4	R504	B7	R511	D7	R529	C11	R536	B3	R542	H11
C500	C8	C512	F12	D502	C11	M504	K11	Q506	C3	R505	E7	R521	D12	R530	F11	R537	C4	VR501	H12



C500	E3	R504	E2
C501	E3	R505	E4
C502	E1	R506	E1
C503	E3	R507	D4
C510	E4	R508	E1
C511	D5	R509	E4
C512	F3	R511	E3
C513	F4	R521	E4
C514	F1	R522	E5
C516	F2	R523	E4
C517	C5	R524	F3
D501	E3	R529	F2
D502	F3	R530	F3
D503	A5	R531	A3
D504	A5	R532	B4
D505	B5	R533	B4
Q501	F2	R534	B4
Q502	F1	R536	D5
Q503	E2	R537	C5
Q504	D3	R538	B5
Q505	C4	R539	B4
Q506	B4	R540	C5
Q507	B5	R541	B5
R500	F3	R542	A5
R501	F3	VR501	B5
R502	E3		

15. EXPLODED VIEW



MECHANICAL PARTS

2	4822 460 11016	
13	4822 423 10104	
29	4822 404 21314	
101	4822 413 31798	
102	4822 413 41876	
200	4822 423 51185	DC203
200	4822 423 51186	DC206
215	4822 492 42711	
218	4822 443 64345	
410	4822 404 21316	
420	4822 410 63247	
604	4822 462 71798	DC203/00, DC206/02
604	4822 462 71898	DC203/80, DC206/82
605	4822 271 30841	
1002	4822 321 62454	
1003	4822 321 62645	
1100	4822 210 10597	

ACCESSORIES

Direct. for use: 4822 736 22284

16. ELECTRICAL PARTS LIST

C2	4822 124 23712	CC 100nF 20/80% 25V	
C17	4822 124 23709	CC 10nF 20% 16V	1)
C18	4822 124 23709	CC 10nF 20% 16V	
C19	4822 124 23722	CT 2.2µF 20% 16V	
C20	4822 124 23722	CT 2.2µF 20% 16V	
C21	4822 124 23736	CE 1µF 20% 50V	
C22	4822 124 23712	CC 100nF 20/80% 25V	
C24	4822 124 23712	CC 100nF 20/80% 25V	
C25	4822 124 20688	CE 33µF 20% 16V	
C27	4822 121 51646	CM 2.2nF 10% 50V	
C28	4822 121 51646	CM 2.2nF 10% 50V	
C29	4822 124 80028	CE 22µF 20% 16VV	
C30	4822 124 80028	CE 22µF 20% 16V	
C31	4822 124 23709	CC 10nF 20% 16V	
C32	4822 124 23709	CC 10nF 20% 16V	
C33	4822 124 23709	CC 10nF 20% 16V	
C34	4822 124 23709	CC 10nF 20% 16V	
C35	4822 126 11468	CTC 0/60 20pF 5%	
C36	4822 126 13213	CTC 0/60 30pF 5%	
C37	4822 124 23736	CE 1µF 20% 50V	
C39	4822 124 21146	CE 100µF 20% 16V	
C42	4822 126 11472	CC 2.2nF 20% 16V	
C43	4822 126 11472	CC 2.2nF 20% 16V	
C44	4822 126 11475	CC 1nF 10% 50V	
C45	4822 126 11475	CC 1nF 10% 50V	
C46	4822 124 23736	CE 1µF 20% 50V	
C47	4822 124 23736	CE 1µF 20% 50V	
C48	4822 124 21146	CE 100µF 20% 16V	
C49	4822 124 21146	CE 100µF 20% 16V	
C50	4822 124 22403	CE 10µF 20% 16V	
C51	4822 126 12425	CE 220µF 20% 16V	
C52	4822 126 12425	CE 220µF 20% 16V	
C53	4822 124 80029	CE 2200µF 20% 16V	
C54	4822 126 12425	CE 220µF 20% 16V	
C55	4822 124 42306	CE 22µF 20% 16V	
C56	4822 124 81046	CE 3300µF 20% 16V	
C59	4822 124 23997	CE 470µF 20% 10V	
C60	4822 124 23712	CC 100nF 20/80% 25V	
C61	4822 124 21146	CE 100µF 20% 16V	
C62	4822 124 21146	CE 100µF 20% 16V	
C63	4822 124 40335	CE 1000µF 20% 16V	
C64	4822 124 40335	CE 1000µF 20% 16V	
C66	4822 121 41678	CM 100nF 10% 50V	
C67	4822 121 41678	CM 100nF 10% 50V	
C68	4822 124 21146	CE 100µF 20% 16V	
C69	4822 124 21146	CE 100µF 20% 16V	
C70	4822 124 22403	CE 10µF 20% 16V	1)
C72	4822 124 23746	CE 47µF 20% 16V	
C73	4822 126 13214	CC 22nF 20% 16V	
C74	4822 124 22403	CE 10µF 20% 16V	
C75	4822 124 23731	CE 470nF 20% 16V	
C76	4822 124 23731	CE 470nF 20% 16V	
C77	4822 124 23712	CC 100nF 20/80% 25V	
C90	4822 124 23709	CC 10nF 20% 16V	
C91	4822 124 80881	CE 100µF 20% 10V	

C201	4822 126 13209	CC 1.5nF 10% 50V	1)
C202	4822 122 31797	CC 22nF 10% 50V	1)
C203	5322 122 31647	CC 1nF 10% 50V	1)
C204	4822 122 31797	CC 22nF 10% 50V	1)
C205	4822 122 31797	CC 22nF 10% 50V	1)
C206	4822 124 23743	CE 22µF 20% 16V	1)
C207	4822 122 32442	CC 10nF 10% 50V	1)
C208	4822 124 23748	CE 3.3µF 20% 50V	1)
C209	4822 122 31971	CTC 0/30 10pF 5%	1)
C210	4822 122 31797	CC 22nF 10% 50V	1)
C211	5322 122 31647	CC 1nF 10% 50V	1)
C213	4822 122 31797	CC 22nF 10% 50V	1)
C214	4822 122 31769	CTC 0/30 18pF 5%	1)
C215	4822 122 32442	CC 10nF 10% 50V	1)
C216	4822 122 31797	CC 22nF 10% 50V	1)
C217	4822 124 80004	CE 470nF 20% 50V	1)
C219	4822 122 31797	CC 22nF 10% 50V	1)
C220	4822 124 23746	CE 47µF 20% 16V	1)
C223	4822 122 31797	CC 22nF 10% 50V	1)
C227	4822 122 31797	CC 22nF 10% 50V	1)
C228	4822 124 23748	CE 3.3µF 20% 50V	1)
C230	4822 124 23747	CE 4.7µF 20% 25V	1)
C232	4822 122 32442	CC 10nF 10% 50V	1)
C233	4822 122 31727	CTC 0/30 470pF 5%	1)
C234	4822 122 31766	CTC 0/30 120pF 5%	1)
C235	4822 126 13212	CTC 0/30 100pF 10%	1)
C236	4822 124 23748	CE 3.3µF 20% 50V	1)
C237	4822 124 23743	CE 22µF 20% 16V	1)
C238	4822 122 32442	CC 10nF 10% 50V	1)
C239	4822 122 32442	CC 10nF 10% 50V	1)
C240	4822 126 13212	CTC 0/30 100pF 10%	1)
C241	4822 122 31797	CC 22nF 10% 50V	1)
C242	4822 124 80004	CE 407nF 20% 50V	1)
C243	4822 124 22403	CE 10µF 20% 16V	1)
C244	4822 122 32442	CC 10nF 10% 50V	1)
C245	4822 126 11815	CC 100pF 10% 50V	1)
C246	4822 126 13231	CTC 750/120 330pF 5%	1)
C300	4822 124 23714	CC 100nF 10% 50V	
C301	4822 124 23731	CE 470nF 20% 16V	
C302	4822 122 31072	CC 47pF 5% 50V	
C303	4822 126 13214	CC 22nF 20% 16V	
C304	4822 124 23736	CE 1µF 20% 50V	
C305	4822 124 23709	CC 10nF 20% 16V	
C306	4822 124 80028	CE 22µF 20% 16V	
C307	4822 126 13215	CC 3.3nF 20% 16V	
C308	4822 126 13216	CC 6.8nF 20% 16V	
C309	4822 126 13214	CC 22nF 20% 16V	
C310	4822 126 13228	CC 820pF 10% 50V	
C311	4822 121 70014	CM 15nF 10% 50V	
C312	4822 121 70014	CM 15nF 10% 50V	
C313	4822 124 23711	CC 10nF 20% 25V	
C314	4822 126 13214	CC 22nF 20% 16V	
C315	4822 124 23736	CE 1µF 20% 50V	
C316	4822 121 70004	CT 1µF 20% 25V	
C317	4822 124 80882	CE 220nF 20% 50V	

C318	4822 126 11816	CC 1nF 10% 50V	
C319	4822 124 22403	CE 10µF 20% 16V	
C320	4822 124 23736	CE 1µF 20% 50V	
C321	4822 124 23736	CE 1µF 20% 50V	
C322	4822 126 12408	CTC 0/60 15pF 5%	
C323	4822 126 11475	CC 1nF 10% 50V	
C324	4822 124 23736	CE 1µF 20% 50V	
C325	4822 126 13214	CC 22nF 20% 16V	
C326	4822 124 23746	CE 47µF 20% 16V	
C327	4822 126 13214	CC 22nF 20% 16V	
C328	4822 126 13217	CC 22nF 20/80% 25V	
C329	4822 126 13214	CC 22nF 20% 16V	
C330	4822 126 13217	CC 22nF 20/80% 25V	
C332	4822 126 12521	CC 22pF 5% 50V	
C333	4822 126 13214	CC 22nF 20% 16V	
C335	4822 126 13214	CC 22nF 20% 16V	
C336	4822 124 23714	CC 100nF 10% 50V	1)
C337	4822 126 12425	CE 220µF 20% 16V	
C341	4822 121 70488	CM 100nF 10% 50V	2)
C342	4822 121 70488	CM 100nF 10% 50V	2)
C343	4822 124 23996	CE 4.7µF 20% 50V	2)
C344	4822 121 42687	CM 3.3nF 10% 50V	2)
C345	4822 122 32027	CC 56pF 5% 50V	2)
C346	4822 121 70488	CM 100nF 10% 50V	2)
C347	4822 121 70488	CM 100nF 10% 50V	2)
C348	4822 121 70568	CM 68nF 5% SMC	2)
C349	4822 121 70568	CM 68nF 5% SMC	2)
C350	4822 121 70488	CM 100nF 10% 50V	2)
C352	4822 121 70488	CM 100nF 10% 50V	2)
C356	4822 124 23716	CC 150nF 20% 50V	2)
C500	4822 124 41398	CE 1µF 20% 50V	1)
C500	4822 124 23736	CE 1µF 20% 50V	2)
C501	4822 124 41398	CE 1µF 20% 50V	1)
C501	4822 124 23736	CE 1µF 20% 50V	2)
C502	4822 126 11814	CC 10pF/0.5 50V	1)
C502	5322 122 32448	CTC 0/30 10pF 5%	2)
C503	4822 126 11814	CC 10pF/0.5 50V	1)
C503	5322 122 32448	CTC 0/30 10pF 5%	2)
C510	4822 121 70487	CM 68nF 10% 50V	
C511	4822 121 70487	CM 68nF 10% 50V	
C512	4822 121 70567	CM 1500pF 10% 50V	
C513	4822 121 70567	CM 1500pF 10% 50V	
C514	4822 121 70486	CM 33nF 5% 50V	
C516	4822 121 70486	CM 33nF 5% 50V	
C517	4822 124 21146	CE 100µF 20% 16V	1)
C517	4822 124 23997	CE 470µF 20% 10V	2)
R202	5322 122 31647	CC 1nF 10% 50V	1)
TC1	4822 125 50309	TRIM CAP 20pF	
TC202	4822 125 50601	TRIM CAP 10pF	1)
TC203	4822 125 50309	TRIM CAP 20pF	1)
TC204	4822 125 50667	TRIM CAP 60pF	1)
TC205	4822 125 50667	TRIM CAP 60pF	1)

NOTE:
- All fixed resistors on AM PCB are chip types 1/8W 5%
- All other fixed resistors are carbon film 1/8W 5% except as otherwise noted on schematics

1502	4822 100 12171	POTM. BALANCE	
1503	4822 102 40094	POTM. VOL + SWITCH	
1504	4822 100 12172	POTM. TONE	
R300	4822 100 12173	TRIM POTM 20k	
R306	4822 100 12174	TRIM POTM 30k	
R308	4822 100 12169	TRIM POTM 50k	
R322	4822 100 12173	TRIM POTM 20k	
R360	4822 100 12182	TRIM POTM 1k	2)
VR201	4822 100 11737	TRIM POTM 20k	1)
VR501	4822 100 12212	TRIM POTM 5k	2)

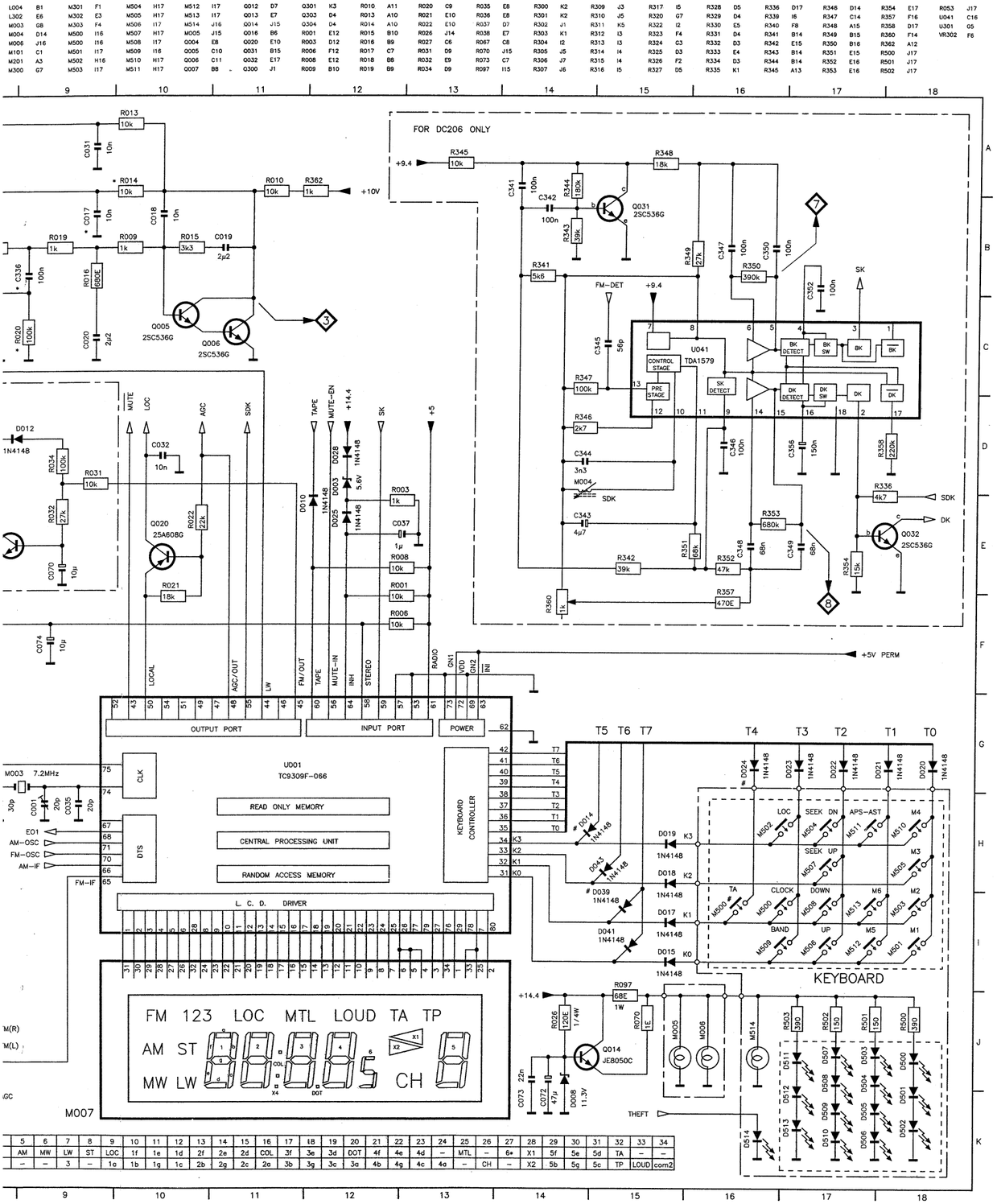
L1	4822 157 63657	CHOKE 1.6mH	
L2	4822 158 50067	FERRITE BEAD	
L4	4822 157 63283	4.7µH 10%	
L201	4822 157 63283	4.7µH	1)
L202	4822 157 63566		1)
L203	4822 157 63567	RF COIL	1)
L204	4822 157 63568		1)
L205	4822 157 63569	RF COIL	1)
L207	4822 157 63571		1)
L208	4822 157 63572	RF COIL	1)
L209	4822 158 50066	FERRITE 22µH	1)
L210	4822 157 63573	IF	1)
L211	4822 157 63574	IF	1)
L302	4822 157 62552	2.2µH 20%	
M4	4822 156 21731	SDK	2)
M303	4822 157 71183	DETECTION	

	4822 130 30621	1N4148	
D3	4822 130 82757	ZENER 5.6V 1/2W	
D7	4822 130 34233	ZENER 5.1V 1/2W	
D8	4822 130 34197	ZENER 11.1-11.6V 1/2W	
D9	4822 130 82756	ZENER 10.1V 1/2W	
D63	4822 130 31438	1N4001	
D67	4822 130 82582	2A RL204	
D71	4822 130 34174	ZENER 4.7V 1/2W	
D72	4822 130 34278	ZENER 6.8V 1/2W	
D74	4822 130 82756	ZENER 10.1V 1/2W	
D301	4822 130 34233	ZENER 5.1V 1/2W	
VD201	4822 130 82777	SVC321-D VARICAP	1)
VD202	4822 130 82777	SVC321-D VARICAP	1)
VD203	4822 130 82777	SVC321-D VARICAP	1)
ZD403	4822 130 34233	ZENER 5.1V 1/2W	1)

4822 130 42298	2SC536G	
4822 130 62205	2SA608G	
4822 130 61748	2SC2668-O	
4822 130 62718	8050 C/D	

7. MAIN PCB – DTS + FM IF

| | | |


FOR DC206 ONLY
U001
TC9309F-066
CLK
DTS
READ ONLY MEMORY
CENTRAL PROCESSING UNIT
RANDOM ACCESS MEMORY
L. C. D. DRIVER
OUTPUT PORT
INPUT PORT
POWER
KEYBOARD CONTROLLER
U041
TDA1579
CONTROL STAGE
PRE STAGE
SK DETECT
BK DETECT
DK DETECT
KEYBOARD
FM 123 LOC MTL LOUD TA TP
AM ST
MW LW
CH
M007
Q005 2SC536G
Q006 2SC536G
Q031 2SC536G
Q032 2SC536G
Q020 25A608C
Q014 JE8050C
+9.4
+10V
+5V PERM
FM-DET
SK
SDK
DK
THEFT
MUTE
LOC
AGC
TAPE
MUTE-EN
+14.4
+5
LOCAL
AGC/OUT
LW
FM/OUT
INH
STEREO
RADIO
ON1
VDD
ON2
INI
M003 7.2MHz
EO1
AM-OSC
FM-OSC
AM-IF
FM-IF

| | | |

10. SURVEY OF DC VOLTAGES

U002 LA6458M

1-3 = 4.6 V
4 = 0 V
5-7 = 4.6 V
8 = 10.03 V

U003 HA13119

1 = 2 V
2 = 0 V
3,4 = 6.8 V
5 = 0 V
6 = 6.8 V
7 = 14 V
8 = 9.4 V
9 = 2 V

U004 LA1862M

1 = 3.84 V
2 = 2.0 V
3 = 0 V
4 = 2.7 V
5 = 0 V
6 = 2.8 V
7 = 0.28 V
8 = 9.2 V
9 = 0 V
10,11 = 4.8 V
12 = 2.8 V
13 = 0.93 V
14 = 0.82 V
15,16 = 2.9 V
17 = 4.8 V
18 = 27 mV
19,20 = 3.4 V
21 = 3.7 V
22,23 = 3.4 V
24 = 4.78 V
25 = 4.64 V
26 = 4.8 V
27 = 0 V
28 = 4.0 V
29 = 4.25 V
30,31 = 3.8 V
32 = 2 V
33 = 4.84 V
34 = 3.4 V
35,36 = 3.7 V

U201 LA1135

1 = 2.67 V
2 = 2.04 V
3 = 0.8 V
4 = 0.51 V
5 = 0 V
6 = 2.03 V
7 = 7.75 V
8 = 7.7 V
9 = 0.8 V
10 = 7.74 V
11 = 0.67 V
12 = 0 V
13 = 3 V
14 = 7.75 V
15 = 1.2 V
16 = 5.74 V
17 = 3 V
18 = 5.74 V
19 = 5.71 V
20 = 3.04 V

U500 LA6458SS

1 = 8.5 V
2-4 = 4 V
5 = 0 V
6-8 = 4 V
9 = 8.55 V

Q004 2SC536G

E = 9 mV
C = 8.58 v
B = 8 mV

Q005 2SC536G

E = 0.6 V
C = 1.079 V
B = 1.07 V

Q006 2SC536G

E = 0 V
C = 1.079 V
B = 0.6 V

Q007 2SC536G

E = 0 V
C = 0 V
B = 0.7 V LW

Q012 KTC8550

E = 9.3 V
B = 8.5 V
C = 9.2 V

Q013 KTC8050

E = 7.76 V
B = 8.4 V
C = 9.2 V

Q014 KTC8050

E = 9.8 V
C = 14 V
B = 10.4 V

Q016 2SA608G

E = 4.9 V
C = 0 V
B = 4.74 V

Q020 2SA608G

E = 4.3 V
C = 0.27 V
B = 4.3 V

Q034 KTC8050

E = 4.98 V
B = 5.6 V
C = 11.2 V

Q035 KTC8050

E = 4.98 V
B = 5.6 V
C = 4.98 V

Q036 KTC8050

E = 10 V
B = 10.58 V
C = 14 V

Q037 KTC8050

E = 9.29 V
B = 9.87 V
C = 14 V

Q039 2SC536G

E = 0 V
C = 2.5 V
B = 7 mV

Q040 2SA608G

E = 14.09 V
C = 0 V
B = 14.11 V

Q041 2SC536G

E = 2.1 V
C = 13.2 V
B = 2.16 V

Q044 2SA608G

E = 13.2 V
C = 2.16 V
B = 10.3 V

Q300 2SA608G

E = 3.8 V
C = 1.7 V
B = 3.4 V

Q301 2SC536G

E = 0 V
C = 1 mV
B = 0.618 V

Q303 2SC2668O

E = 1.72 V
C = 6.7 V
B = 1 V

Q304 2SC2668O

E = 0.22 V
C = 1.68 V
B = 0.9 V

Q201 2SC536G

E = 0 V
C = 0.1 V LW
B = 0.7 V LW

Q202 2SC536G

E = 0 V MW
C = 0 V
B = 30mV MW

Q203 2SC536G

E = 7.02 V
C = 7.72 V
B = 7.23 V

Q204 2SC536G

E = 0 V
C = 0 V
B = 0.65 V

Q205 2SK184GR

G = 7.12 V
S = 7.12 V
D = 7.12 V

Q208 2SC536G

E = 5.3 V
C = 7.1 V
B = 4.5 V

Q209 2SC536G

E = 0 V
C = 0 V
B = 0.6 V

Q210 2SC536G

E = 0 V
C = 0 V
B = 0.6 V LW

Q211 2SC536G

E = 0 V
C = 0 V
B = 0.7 V LW

Q212 2SA608G

E = 4.16 V
C = 0.85 V
B = 2.26 V

Q213 2SC536G

E = 0 V
C = 7.27 V
B = 4.21 V

Q217 2SK163M

G = 0 V
S = 0 V
D = 4.6 V

Q408 2SA608G

E = 5.4 V
C = 0.068 V
B = 9.2 V

Q411 2SC536G

E = 0 V
C = 6 mV
B = 0.742 V

Q501 2SC536G

E = 1 mV
C = 0 V
B = 3 mV

Q502 2SC536G

E = 1 mV
C = 0 V
B = 3 mV

Q503 2SC536G

E = 0.342 V
C = 5.62 V
B = 0.951 V

Q504 2SC536G

E = 0.353 V
C = 5.57 V
B = 0.958 V

Q505 JE8050C

E = 1 mV
B = 3 mV
C = 0 V

Q506 JE8050C

E = 1 mV
B = 6 mV
C = 0 V

IC701 TAD1579

1 =0 V
2 =0.69V
3 =22 mV
4 =7.84 V
5,6 =4.67 V
7 =9.34 V
8 =4.67 V
9 =5.8 V
10 =4.68 V
11 =5.89 V
12 =4.57 V
13 =4.64 V
14,15 =4.68 V
16 =8.0 V
17 =3.95 V
18 =0 V

Q701 2SC536G

E =0 V TA
C =3.7 V TA
B =0.6 V TA

Q702 2SC536G

E =0 V
C =11 mV
B =0.95 V

Q501 2SC536G

E =1 mV
C =1 mV
B =3 mV

Q502 2SC536G

E =2 mV
C =1 mV
B =4 mV

Q503 2SC536G

E =0.33 V
C =5.79 V
B =0.95 V

Q504 2SC536G

E =0.33 V
C =5.72V
B =0.95 V

Q505 KTC8050C

E =0.3 V
B =0.3 V
C =0.79 V

Q506 2SC536G

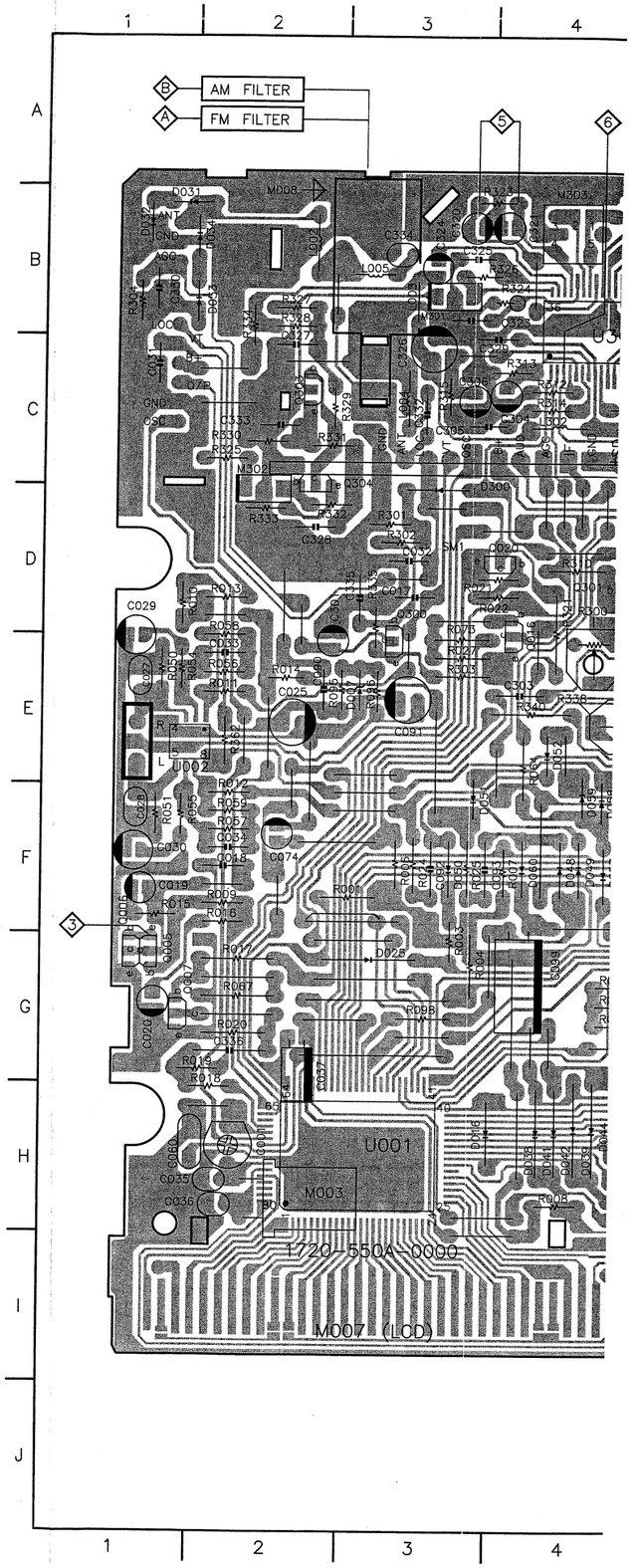
E =1 mV
B =67 mV
C =4.75 V

Q507 KTC8050C

E =0 mV
B =0.72 V
C =2 mV

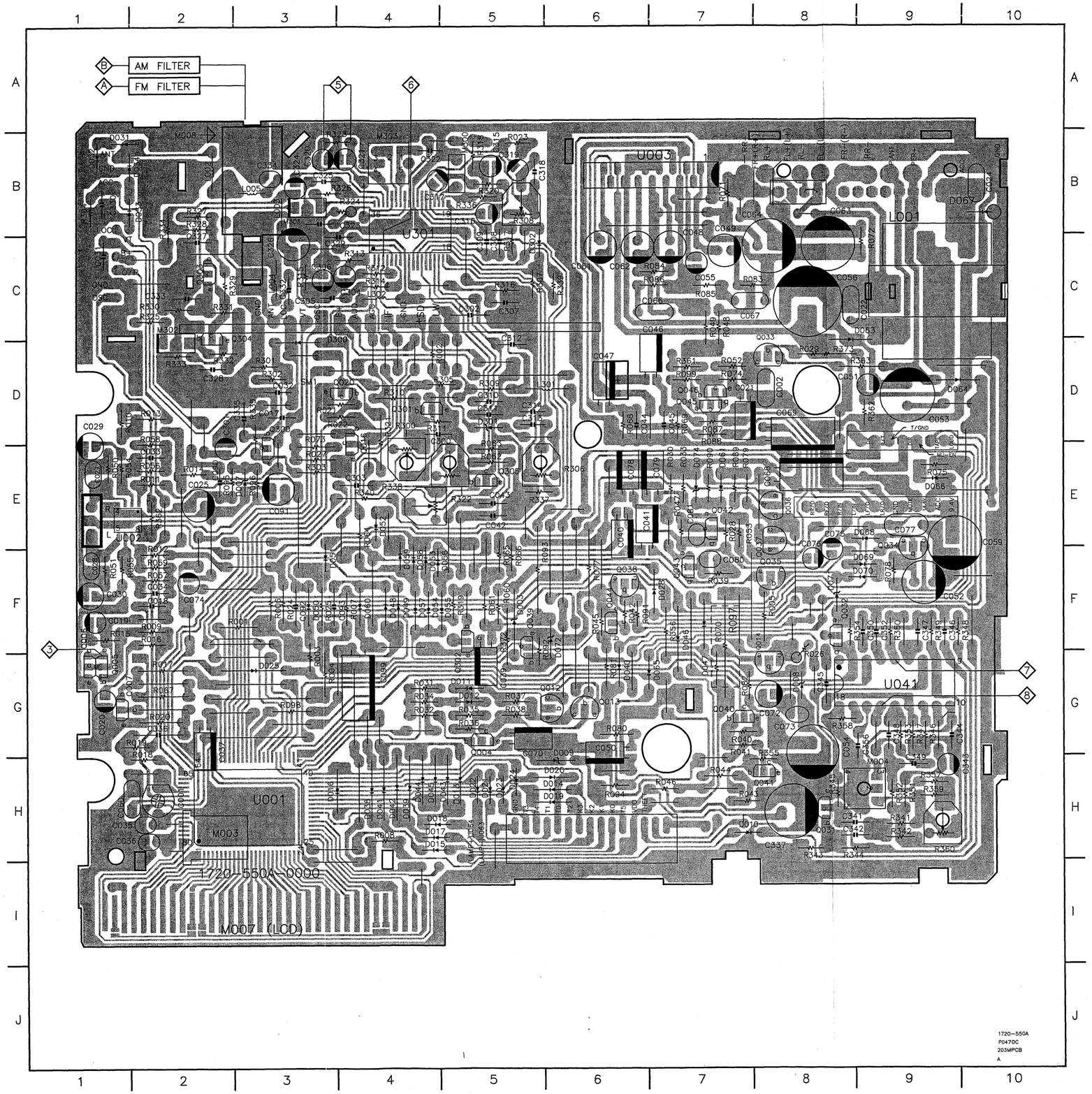
6. MAIN PCB

C001	H2	C348	G9	R003	G3	R322	E5
C002	D8	C349	H9	R004	G3	R323	B3
C017	D3	C350	F9	R005	F8	R324	B4
C018	F2	C352	F9	R006	F3	R325	C2
C019	F1	C356	H9	R007	F4	R326	B3
C020	G1	D003	F5	R008	H4	R327	B2
C021	D7	D007	E3	R009	F2	R328	B2
C022	C9	D008	G8	R010	D2	R329	C3
C024	B9	D009	G6	R011	E2	R330	C2
C025	E2	D010	H7	R012	F2	R331	C2
C027	E1	D011	G5	R013	D2	R332	D2
C028	F1	D012	G5	R014	E2	R333	D2
C029	D1	D014	H5	R015	F1	R334	C2
C030	F1	D015	H4	R016	F2	R335	D3
C031	C1	D017	H4	R017	G2	R339	C6
C032	D3	D018	H4	R018	G2	R340	E4
C033	E2	D019	H5	R019	G1	R341	H9
C034	F2	D020	H5	R020	G2	R342	H9
C035	H1	D021	H5	R021	D3	R343	H8
C036	H1	D022	H5	R022	D3	R344	H8
C037	H2	D023	H5	R023	B5	R345	H8
C039	G5	D024	H5	R027	E3	R346	G9
C040	F6	D025	G3	R029	D8	R347	G9
C041	E7	D028	F7	R031	G4	R348	F9
C042	E5	D031	B1	R032	G4	R349	F9
C043	E5	D032	B1	R034	G4	R350	F9
C044	D6	D033	B2	R035	G5	R351	H9
C045	D7	D034	B2	R036	G5	R352	H9
C046	C6	D039	H4	R037	G5	R353	G9
C047	D6	D040	G6	R038	G5	R354	F9
C048	C7	D041	H4	R040	G7	R355	H8
C049	B7	D043	H5	R041	G7	R356	F7
C050	G6	D046	F7	R042	F6	R357	H9
C051	D8	D047	G7	R043	H7	R358	G8
C052	F9	D051	F3	R044	H7	R360	H9
C053	D9	D052	E4	R045	F6	R361	D7
C054	H8	D053	F4	R046	H7	R362	D9
C055	C7	D054	F4	R048	C7	R362	E2
C056	C8	D055	F5	R049	C7	R363	D8
C059	E9	D056	F5	R050	E1	U001	H3
C060	H1	D057	F4	R051	F1	U002	E2
C061	C6	D058	F4	R052	D7	U003	B6
C062	C6	D059	F4	R054	E2	U041	G9
C063	B8	D061	E7	R055	F2	U301	B4
C064	B7	D063	C8	R056	E2		
C066	C6	D064	D9	R057	F2		
C067	C7	D065	G7	R058	D2		
C068	E8	D066	E9	R059	F2		
C069	D8	D068	E8	R060	F5		
C070	H5	D069	F8	R061	F5		
C072	G8	D070	F8	R062	E5		
C073	G8	D071	F8	R063	E5		
C074	F2	D072	G6	R064	E4		
C075	E8	D074	E7	R067	G2		
C076	F8	D300	D3	R070	F7		
C077	E9	D301	D5	R071	B7		
C090	E2	D302	C5	R072	C9		
C091	E3	L001	C9	R073	D3		
C300	E4	L002	B2	R074	D7		
C301	D2	L003	B3	R075	E9		
C302	C5	L004	C3	R077	F6		
C303	E4	L301	D5	R078	F9		
C304	C4	L302	C4	R079	E7		
C305	C3	M003	H2	R080	G6		
C306	C3	M004	H9	R081	G6		
C307	C5	M007	I3	R082	G7		
C308	C5	M300	B5	R083	C7		
C309	C5	M301	B3	R084	C6		
C310	D5	M302	C2	R085	C7		
C311	D5	M303	B4	R086	C6		
C312	D5	Q004	G5	R087	D7		
C313	D5	Q005	G1	R088	E7		
C314	D5	Q006	F1	R089	E7		
C315	B5	Q007	G2	R090	E7		
C316	B5	Q012	G5	R091	F7		
C317	B4	Q013	G6	R092	G6		
C318	B6	Q014	F8	R093	F6		
C319	B5	Q016	E4	R094	H6		
C320	B3	Q020	D3	R095	E2		
C321	B4	Q031	H8	R096	E3		
C322	B4	Q032	F8	R097	F7		
C323	B4	Q033	D8	R099	D7		
C324	B3	Q034	F9	R300	D4		
C325	B3	Q035	F8	R301	D3		
C326	C3	Q036	E8	R302	D3		
C327	C2	Q037	F8	R303	E3		
C328	D2	Q038	F6	R304	B1		
C329	C3	Q039	F5	R305	D4		
C330	B1	Q040	G7	R306	E6		
C332	C3	Q041	H8	R307	C5		
C333	C2	Q042	E7	R308	B5		
C335	D3	Q043	F7	R309	D5		
C336	G2	Q044	F6	R310	D4		
C337	H8	Q045	D7	R311	D4		
C341	H8	Q046	D7	R312	C4		
C342	H8	Q300	D3	R313	C4		
C343	H9	Q301	D4	R314	C4		
C344	G9	Q303	C2	R315	C3		
C345	G8	Q304	D2	R316	C5		
C346	F9	R001	F2	R317	C5		
C347	F9	R002	D5	R320	B5		



6. MAIN PCB

C001	H2	C348	G9	R003	G3	R322	E5
C002	D8	C349	H9	R004	G3	R323	B3
C017	D3	C350	F9	R005	F8	R324	B4
C018	F2	C352	F9	R006	F3	R325	C2
C019	F1	C356	H9	R007	F4	R326	B3
C020	G1	D003	F5	R008	H4	R327	B2
C021	D7	D007	E3	R009	F2	R328	B2
C022	C9	D008	G8	R010	D2	R329	C3
C024	B9	D009	G6	R011	E2	R330	C2
C025	E2	D010	H7	R012	F2	R331	C2
C027	E1	D011	G5	R013	D2	R332	D2
C028	F1	D012	G5	R014	E2	R333	D2
C029	D1	D014	H5	R015	F1	R334	C2
C030	F1	D015	H4	R016	F2	R335	D3
C031	C1	D017	H4	R017	G2	R339	C6
C032	D3	D018	H4	R018	G2	R340	E4
C033	E2	D019	H5	R019	G1	R341	H9
C034	F2	D020	H5	R020	G2	R342	H9
C035	H1	D021	H5	R021	D3	R343	H8
C036	H1	D022	H5	R022	D3	R344	H8
C037	H2	D023	H5	R023	B5	R345	H8
C039	G5	D024	H5	R027	E3	R346	G9
C040	F6	D025	G3	R029	D8	R347	G9
C041	E7	D028	F7	R031	G4	R348	F9
C042	E5	D031	B1	R032	G4	R349	F9
C043	E5	D032	B1	R034	G4	R350	F9
C044	D6	D033	B2	R035	G5	R351	H9
C045	D7	D034	B2	R036	G5	R352	H9
C046	C6	D039	H4	R037	G5	R353	G9
C047	D6	D040	G6	R038	G5	R354	F9
C048	C7	D041	H4	R040	G7	R355	H8
C049	B7	D043	H5	R041	G7	R356	F7
C050	G6	D046	F7	R042	F6	R357	H9
C051	D8	D047	G7	R043	H7	R358	G8
C052	F9	D051	F3	R044	H7	R360	H9
C053	D9	D052	E4	R045	F6	R361	D7
C054	H8	D053	F4	R046	H7	R362	D9
C055	C7	D054	F4	R048	C7	R362	E2
C056	C8	D055	F5	R049	C7	R363	D8
C059	E9	D056	F5	R050	E1	U001	H3
C060	H1	D057	F4	R051	F1	U002	E2
C061	C6	D058	F4	R052	D7	U003	B6
C062	C6	D059	F4	R054	E2	U041	G9
C063	B8	D061	E7	R055	F2	U301	B4
C064	B7	D063	C8	R056	E2		
C066	C6	D064	D9	R057	F2		
C067	C7	D065	G7	R058	D2		
C068	E8	D066	E9	R059	F2		
C069	D8	D068	E8	R060	F5		
C070	H5	D069	F8	R061	F5		
C072	G8	D070	F8	R062	E5		
C073	G8	D071	F8	R063	E5		
C074	F2	D072	G6	R064	E4		
C075	E8	D074	E7	R067	G2		
C076	F8	D300	D3	R070	F7		
C077	E9	D301	D5	R071	B7		
C090	E2	D302	C5	R072	C9		
C091	E3	L001	C9	R073	D3		
C300	E4	L002	B2	R074	D7		
C301	D2	L003	B3	R075	E9		
C302	C5	L004	C3	R077	F6		
C303	E4	L301	D5	R078	F9		
C304	C4	L302	C4	R079	E7		
C305	C3	M003	H2	R080	G6		
C306	C3	M004	H9	R081	G6		
C307	C5	M007	I3	R082	G7		
C308	C5	M300	B5	R083	C7		
C309	C5	M301	B3	R084	C6		
C310	D5	M302	C2	R085	C7		
C311	D5	M303	B4	R086	C6		
C312	D5	Q004	G5	R087	D7		
C313	D5	Q005	G1	R088	E7		
C314	D5	Q006	F1	R089	E7		
C315	B5	Q007	G2	R090	E7		
C316	B5	Q012	G5	R091	F7		
C317	B4	Q013	G6	R092	G6		
C318	B6	Q014	F8	R093	F6		
C319	B5	Q016	E4	R094	H6		
C320	B3	Q020	D3	R095	E2		
C321	B4	Q031	H8	R096	E3		
C322	B4	Q032	F8	R097	F7		
C323	B4	Q033	D8	R099	D7		
C324	B3	Q034	F9	R300	D4		
C325	B3	Q035	F8	R301	D3		
C326	C3	Q036	E8	R302	D3		
C327	C2	Q037	F8	R303	E3		
C328	D2	Q038	F6	R304	B1		
C329	C3	Q039	F5	R305	D4		
C330	B1	Q040	G7	R306	E6		
C332	C3	Q041	H8	R307	C5		
C333	C2	Q042	E7	R308	B5		
C335	D3	Q043	F7	R309	D5		
C336	G2	Q044	F6	R310	D4		
C337	H8	Q045	D7	R311	D4		
C341	H8	Q046	D7	R312	C4		
C342	H8	Q300	D3	R313	C4		
C343	H9	Q301	D4	R314	C4		
C344	G9	Q303	C2	R315	C3		
C345	G8	Q304	D2	R316	C5		
C346	F9	R001	F2	R317	C5		
C347	F9	R002	D5	R320	B5		



	4822 130 63047	8550 C/D	
Q205	4822 130 62722	FET 2SK184GR	1)
Q217	4822 130 42833	FET 2SK163M	1)
Q507	4822 130 41651	2SC2001 L,K	2)

U1	4822 209 31715	TC9309-066	
U2	4822 209 33469	LA6458M	
U3	4822 209 32427	HA13119	
U41	4822 209 31206	TDA1579	2)
U201	4822 209 63917	LA1135	1)
U301	4822 209 32431	LA1862M	

MISCELLANEOUS

602	4822 134 40855	LAMP 14V 40mA	
603	4822 130 60379	LED ORANGE	DC203/00, DC206/02
603	4822 130 83694	LED GREEN	DC203/80, DC206/82
609	4822 130 83809	LED BLINK	
631	4822 071 23002	FUSE	
CF201	4822 242 80254	CERAM FILTER 450kHz	1)
M3	4822 242 80363	CRYSTAL 7.2MHz	
M5/6	4822 134 41189	LAMP 9V 60mA	
M7	4822 130 91402	LCD	
M300	4822 242 81755	CERAM. RESON. 456kHz	
M301	4822 242 81754	CERAM. FILTER 10.7MHz	
M302	4822 242 70612	CERAM. FILTER 10.7MHz	

1) only DC203
2) only DC206

Car cassette deck TN-301NX

-227
-234
-239

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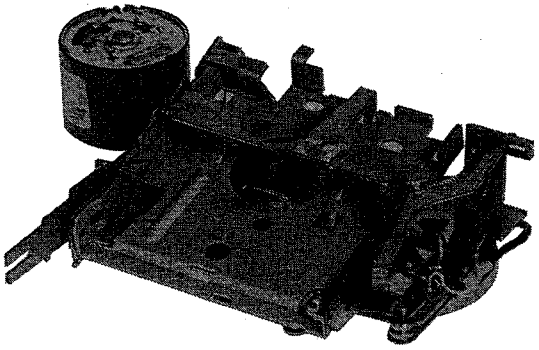

33770A22

ServiceManual

12 V

(GB)
TECHNICAL DATA

Tape speed	:	4,76 cm/sec. +3% -2%
Wow & flutter	:	< 0,35% (JIS)
Operating voltage	:	10 V ~ 16 V
Fast winding time	:	< 180 secs (C-60)

(NL)
TECHNISCHE GEGEVENS

Bandsnelheid	:	4,76 cm/sec. +3% -2%
Wow & flutter	:	< 0,35% (JIS)
Werkingsspanning	:	10 V ~ 16 V
Tijd snel opspoelen	:	< 180 sec (C-60)

(F)
CARACTERISTIQUES TECHNIQUES

Vitesse de défilement	:	4,76 cm/sec. +3% -2%
Pleurage et scintillement	:	< 0,35%
Tension de fonctionnement	:	10 V ~ 16 V
Durée de bobinage rapide	:	< 180 sec (C-60)

(D)
TECHNISCHE DATEN

Bandgeschwindigkeit	:	4,76 cm/sec. +3% -2%
Gleichlaufschwankungen	:	< 0,35%
Betriebsspannung	:	10 V ~ 16 V
SVL-Dauer	:	< 180 s (C-60)

(I)
DATI TECNICI

Velocità di trascinamento	:	4,76 cm/sec. +3% -2%
Wow e flutter	:	< 0,35%
Tensione di lavoro	:	10 V ~ 16 V
Tempo di avvolgimento	:	< 180 s (C-60)

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4822 725 24125

(GB) MAINTENANCE

The cassette mechanism requires periodic cleaning, as well as periodic lubrification of the principal points.

1. Cleaning with alcohol or spirit

Head, capstan, pressure roller, belt, pulleys.

To clean head, pressure roller and capstan it is also possible to use a drop-in cassette (SBC114–4822 389 20035).

2. Lubrification instructions

Refer to exploded view.

(NL) ONDERHOUD

Het cassette mechanisme dient periodiek schoongemaakt en op de belangrijkste punten gesmeerd te worden.

1. Schoonmaken met alcohol of spiritus

Kop, toonas, drukrol, snaar, poelies.

Voor het reinigen van kop, drukrol en toonas kan ook de "drop-in" cassette (SBC114–4822 389 20035) worden gebruikt.

2. Smeervoorschrift

Zie "exploded view" tekening.

(F) MAINTENANCE

Le mécanisme de cassette doit être nettoyé régulièrement et graissé à ses points cardinaux.

1. Nettoyage à l'alcool ou à l'alcool éthylique

Tête, cabestan, galet presseur, courroie, poulies.

Pour ce qui est du nettoyage de la tête, du galet presseur et du cabestan on pourra également utiliser la cassette "drop in" (SBC114–4822 389 20035).

2. Lubrification

Voir le dessin de l'éclaté mécanique.

(D) WARTUNG

Der Cassettenteil soll regelmässig gereinigt und an den wichtigsten Stellen geschmiert werden.

1. Reinigen mit Alkohol oder Spiritus

Kopf, Tonwelle, Andruckrolle, Pese, Seilrollen.

Zum Reinigen von Kopf, Andruckrolle und Tonwelle kann auch die "drop-in" Cassette (SBC114–4822 389 20035) benutzt werden.

2. Schmiervorschrift

Siehe Explosionszeichnung.

(I) MANUTENZIONE

La meccanica del registratore richiede pulizie periodiche, come pure periodiche lubrificazioni dei punti principali.

1. Pulizia con alcool o spirito

Testina, capstan, rullo pressore, cinghia, puleggie.

Per la pulizia della testina, del rullo pressore e del capstan si può usare la cassette (SBC114–4822 389 20035).

2. Istruzioni per la lubrificazione

Fare riferimento all'esploso.

(GB) ADJUSTMENT

Equipment required:

- spring scale 50–500 g	4822 395 80028
- friction test cassette	4822 395 30054
- universal test cassette SBC420	4822 397 30071
- wow & flutter meter	

Azimuth

Azimuth alignment should be carried out on a complete car radio; proceed as follows:

- connect the millivoltmeter to the loudspeaker outputs.
- insert test cassette SBC420 and play back the 10 kHz signal.
- Turn the azimuth adjust screw (M2X10) for equal and maximum output voltage reading for both the LH and RH channel.
- lockpaint the azimuth adjust screw.

CHECKS

1. Pressure roller pressure

The pressure exerted by the pressure roller on the capstan should be in the 250 - 350 g range (refer to Fig. 1).

This pressure is measured as follows:

- select Play mode.
- push the pressure roller back at the given point by means of the spring scale.
- at the point where pressure roller and capstan just disengage the spring scale should be read.

If the pressure is not correct, replace spring 67.

2. Friction clutch 62

- insert friction test cassette.
- play take-up and fast wind torque should be between 35 and 75 gcm.

If the play take-up torque deviates from the aforementioned value, friction clutch 62 should be replaced.

3. Wow & flutter/tape speed

This check is carried out on a complete car radio; proceed as follows:

- connect the wow & flutter meter to the loudspeaker output.
- insert test cassette SBC420 and play back the 3150Hz signal.
- the wow & flutter value should be <0,35%.
- tape speed should be 4,76 cm/sec (+3%, -2%); no speed adjustment facility has been provided.

In the event of an excessive wow and flutter value, the following parts should be checked as to correct functioning:

- motor
- pressure roller
- drive belt (in case of replacement, clean flywheel pulley)
- friction clutch
- flywheel

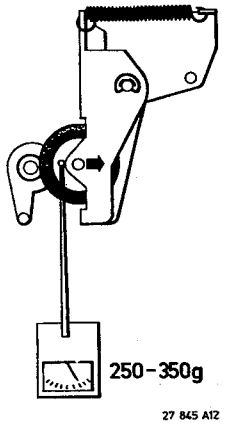


Fig. 1

(NL) INSTELLINGEN

Benodigde meetinstrumenten:

- veerdrukmeter 50–500 g	4822 395 80028
- frictie testcassette	4822 395 30054
- universele testcassette SBC420	4822 397 30071
- wow & flutter meter	

Azimuth

De azimuth instelling dient te geschieden met de autoradio kompleet en wel als volgt:
- sluit millivoltmeter aan op de luidsprekeruitgangen
- breng de testcassette SBC420 in en geef het 10 kHz signaal weer.
- stel met behulp van de azimuthschroef (M2X10) de uitgangsspanning zo in dat deze voor zowel het linker- als het rechterkanaal gelijk en maximaal is.
- lak azimuthschroef af.

CONTROLES

1. Drukrolkracht

De drukrolkracht tegen de toonas moet liggen tussen 250 en 350 gram (zie fig. 1).

Deze wordt als volgt gemeten:
- breng cassettedeck in stand weergave.
- druk de drukrol met de veerdrukmeter in het aangegeven punt terug.
- op het moment dat de drukrol los komt van de toonas moet de meteraanwijzing worden afgelezen.

Indien de drukrolkracht niet juist is moet veer 67 worden vervangen.

2. Frictie 62

- breng de frictie-testcassette in.
- de afspeel-/snelspoelfrictie moet 35–75 gcm zijn.

Indien de afspeelfrictie afwijkt van bovengenoemde waarde, dient frictiekoppeling 62 te worden vervangen.

3. Wow & flutter/bandsnelheid

De controle dient te geschieden met de autoradio compleet en wel als volgt:
- sluit wow & flutter meter aan op de luidsprekeruitgang.
- breng de testcassette SBC420 in en geef het 3150 Hz signaal weer.
- de jengelwaarde moet <0,35% zijn.
- de bandsnelheid moet zijn 4,76 cm/sec +3%, -2%, de snelheid kan niet worden ingesteld.

Bij een buitensporige jengelwaarde dienen de volgende onderdelen op hun juiste werking te worden gecontroleerd:
- motor
- drukrol
- snaar (bij vervanging de vliegwielpoelie schoonmaken)
- frictiekoppeling
- vliegwiel

(F) REGLAGES

Instruments de mesure requis:

- dynamomètre 50–500 g	4822 395 80028
- cassette d'essai de la friction	4822 395 30054
- cassette d'essai universelle SBC420	4822 397 30071
- instrument du pleurage et scintillement	

L'azimuth

Le réglage de l'azimuth doit se faire lorsque l'auto-radio est au complet; on procèdera alors comme suit:
- brancher le millivoltmètre sur les sorties de haut-parleur.
- insérer la cassette d'essai SBC420 et reproduire le signal de 10 kHz.
- à l'aide de la vis réglant l'azimuth (M2X10) régler la tension de sortie de façon qu'elle soit égale et au maximum pour le canal de gauche tout comme celui de droite.
- fixer la vis de l'azimuth à la laque.

CONTROLES

1. Force du galet presseur

La force du galet presseur contre le cabestan doit se situer entre les 250 et 350 g. (voir fig. 1).

Mesurer comme suit.:
- positionner la mécanique sur reproduction.
- retirer le galet presseur á l'aide du dynamométre sur le point indiqué.
- au moment où le galet pressuer se détache du cabestan on lira l'affichage sur l'instrument.

Si la force de pression n'est pas exacte, remplacer le ressort.

2. Friction 62

- introduire la cassette d'essai de friction.
- la friction au défilement et au bobinage rapide doit se situer entre 35 et 75 gcm.

Si la friction d'enroulement s'écarte de la valeur donnée ci-dessus, on procédera au remplacement du couple de friction 62.

3. Pleurage et scintillement/vitesse de défilement

Le contrôle doit se faire lorsque l'auto-radio est au complet, on y alors procèdera de la manière suivante:
- brancher l'instrument du pleurage sur la sortie de haut-parleur.
- introduire la cassette d'essai SBC420 et reproduire le signal de 3150 Hz.
- la valeur de pleurage doit être <0,35%.
- la vitesse de défilement doit être 4,76 sec, +3%, -2%, la vitesse n'est pas réglable.

Si le taux de pleurage s'écarte de la valeur type, il faudra vérifier le fonctionnement des composants suivants:
- moteur
- galet presseur
- courroie d'entraînement (en cas de remplacement, nettoyer le poulie du volant)
- couple de friction
- volant

(D) EINSTELLUNGEN

Benötigte Messgeräte:

- Federwaage 50–500 g	4822 395 80028
- Friktionstestcassette	4822 395 30054
- Universal-Testcassette SBC420	4822 397 30071

- Gerät zum Messen der Tonhöhenschwankungen ("wow & flutter")

Azimuth

Die Azimutheinstellung soll mit dem kompletten Autoradio stattfinden, und zwar wie folgt:
- Millivoltmeter an die Lautsprecherausgänge schalten.
- Testcassette SBC420 einlegen und das 10–kHz-Signal wiedergeben.
- Mit der Azimuth-Einstellschraube (M2X10) die Ausgangsspannung so einstellen, dass sie für sowohl den linken als auch den rechten Kanal gleich ist und den Höchstwert aufweist.
- Azimuth-Einstellschraube lacksichern.

KONTROLLEN

1. Andruckrollendruck

Der Andruckrollendruck an der Tonwelle soll zwischen 250 und 350 g liegen (siehe Bild 1).

Er wird wie folgt gemessen:
- Cassettendeck in Wiedergabestellung bringen.
- Die Andruckrolle mit der Federwaage an der gekennzeichneten Stelle zurückdrücken.
- Im Augenblick als sich die Andruckrolle von der Tonwelle löst, soll die Anzeige an der Federwaage abgelesen werden.

Falls der Andruckrollendruck nicht richtig ist, muss Feder 67 ausgewechselt werden.

2. Reibkupplung 62

- Friktionstestcassette einlegen.
- Die VL-/SVL-Friktion soll 35–75 gcm betragen.

Wenn die VL-Friktion vom vorgenannten Wert abweicht, muss Friktionskupplung 62 ausgewechselt werden.

3. Tonhöhenschwankungen/Bandgeschwindigkeit

Die Kontrolle soll mit kompletten Autoradio wie folgt vorgenommen werden.:
- Gerät zum Messen der Tonhöhenschwankungen an den Lautsprecherausgang schalten.
- Testcassette SBC420 einlegen und das 3150 Hz-Signal wiedergeben.
- Der Jaulwert soll < 0,35% sein.
- Die Bandgeschwindigkeit soll 4,76 s (+3%, -2%) sein; die Geschwindigkeit lässt sich nicht einstellen.

Bei einem übermässigen Jaulwert sollen folgende Bauteile auf ihr richtiges Funktionieren geprüft werden.:
- Motor
- Andruckrolle
- Antriebspese (beim Auswechseln die Schwungradseilrolle reinigen)
- Reibkupplung
- Schwungrad

(I) REGOLAZIONI

Strumenti richiesti:

- Dinamometro 50–500 g	4822 395 80028
- Cassetta campione per la frizione	4822 395 30054
- Cassetta campione universale SBC420	4822 397 30071

- Strumento wow e flutter

Azimuth

La regolazione dell'azimuth deve essere effettuata sul riproduttore collegato all'autoradio procedendo nel seguente modo:
- Collegare un millimetro all'uscita per altoparlante.
- Inserire una cassetta campione SBC420 e riprodurre il segnale a 10 kHz.
- Ruotare la vite per la regolazione dell'azimuth (M2X10) finché la tensione letta per entrambi i canali sia la più elevata.
- Fissare con lacca la vite di regolazione per l'azimuth.

CONTROLLI

1. Pressione del rullo preminastro

La pressione esercitata dal rullo pressore sul capstan deve essere compresa tra 250–350 gr (vedere fig. 1).

Questa pressione deve essere misurata nel seguente modo:
- Mettere l'apparecchio in Play
- Spingere il rullo pressore indietro al punto dato per mezzo del dinamometro.
- Nel punto dove il rullo pressore e il capstan sono liberi la scala del dinamometro darà una certa indicazione.

Se la pressione del rullo preminastro non è corretta sostituire la molla.

2. Forza della frizione 62

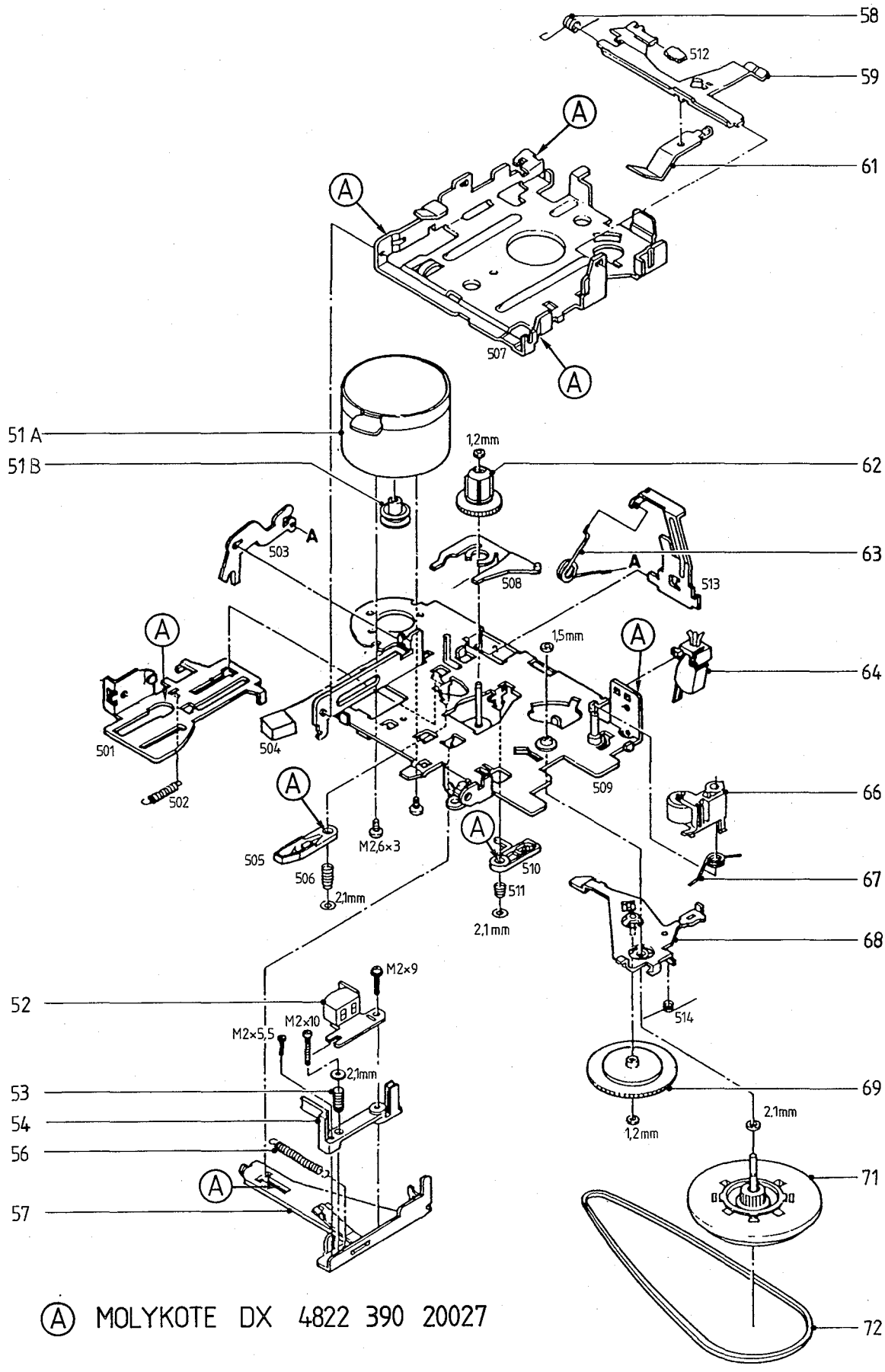
- Inserire la cassetta per il controllo della frizione.
- Riprodurre e leggere l'indicazione sul piattello di trascinamento; deve essere compresa tra 35 e 75 gcm.

Se in posizione play l'indicazione del piattello di trasciamento non è compresa nei valori sopra riportati deve essere sostituita la frizione 62.

3. Wow e flutter/velocità del nastro

Questo controllo deve essere effettuato sul riproduttore collegato all'autoradio procedendo nel seguente modo:
- Collegare un misuratore di Wow e flutter all'uscita per altoparlante.
- Inserire la cassetta campione SBC420 e riprodurre il segnale a 3150 Hz.
- Il valore di Wow e flutter deve essere < 0,35%.
- La velocità deve essere 4,76 cm/sec (+3%, -2%); non è prevista una regolazione semplice.

Nel caso ci sia un valore eccessivo di Wow e flutter, bisogna controllare le seguenti parti se funzionano in modo corretto:
- Motore
- Rullo pressore
- Cinghia di trascinamento (nel caso di sostituzione, pulire la puleggia del volano)
- Frizione
- Volano



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51	4822 361 30404	57	4822 466 82939	61	4822 492 71142	67	4822 492 42623
52	4822 249 30188	58	4822 492 33345	62	4822 466 70743	68	4822 522 10458
53	4822 492 52328	58	4822 492 33354 -234	63	4822 492 42624	69	4822 522 20452
54	4822 404 21247	59	4822 466 82941	64	4822 271 30778	71	4822 528 60396
56	4822 492 33344	59	4822 466 82943 -234	66	4822 403 20242	72	4822 358 31196

NOTES - NOTITIES - NOTES - NOTIZEN - ANNOTAZIONI:

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